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THE MODERN HOSPITAL

A Monthly Journal Devoted to the Building, Equipment, and Aaministration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services

Vol. III *July, 1914* No. 1

WHERE FREE PATIENTS WILL FARE WELL.

Mount Zion Hospital, San Francisco, Has Built Magnificent Structure for Pay and Free Patients—Some New Features in Equipment.

By JAMES H. McCLELLAND, M. D., San Francisco.

THE Mount Zion Hospital of San Francisco has two distinct objects in view—one, the maintenance of a free clinical department for the needy sick, and the other, a private department to help defray the expenses of the former. The hospital building has therefore been constructed on a somewhat unique plan, so that these two departments, though housed in separate wings, can be operated on an economical basis as regards nursing and service.

In general, the plan of the building is as follows: the north portion contains the free service department, the south the pay service; the two wings are connected by means of a corridor on each floor; the kitchens are situated on the ground floor between the two wings, thus serving each building equally well. The operating and maternity departments are on the fourth floor, and are arranged so that they are convenient to each other. The general plan of the building was designed by Krafft & Sons. Miss J. F. Mackenzie, the former superintendent of nurses of the hospital, arranged a large part of the interior detail work, and the plans were passed on finally by Dr. S. S. Goldwater, of New York. Miss E. McCalmont, of New York, and Miss Mackenzie, with the assistance of the ladies' auxiliary of the board of directors, selected the furnishings and equipment.

The group of buildings consists of the outpatient clinic, the nurses' home, engine room, laundry, employees' building, and the main hospital building. In the near future a new nurses' home of modern construction is to be built on the lots adjoining the hospital.

As stated above, the main building consists of two portions. The north part, or Esther Hellman building, contains the free patients' wards, maternity department, and operating rooms; the south wing contains the pay patients' rooms and wards, and the various offices and dining rooms.

The buildings are of reinforced concrete construction, faced with yellow tile brick. The floors are of various materials—terrazzo in the large

Fig. 1. Mount Zion Hospital—South wing and main entrance.

wards, oak in the private rooms, and white tile in the halls, baths, and utility rooms. Steel lathing was used throughout, on which was put a hard wall plaster; thus the only wood used in the construction is found in the doors, window casings, and floorings in private rooms, making the building practically fire-proof. A complete ventilating system of the hot and cold air type was used, electric elevators were installed, and the steam system of heating.

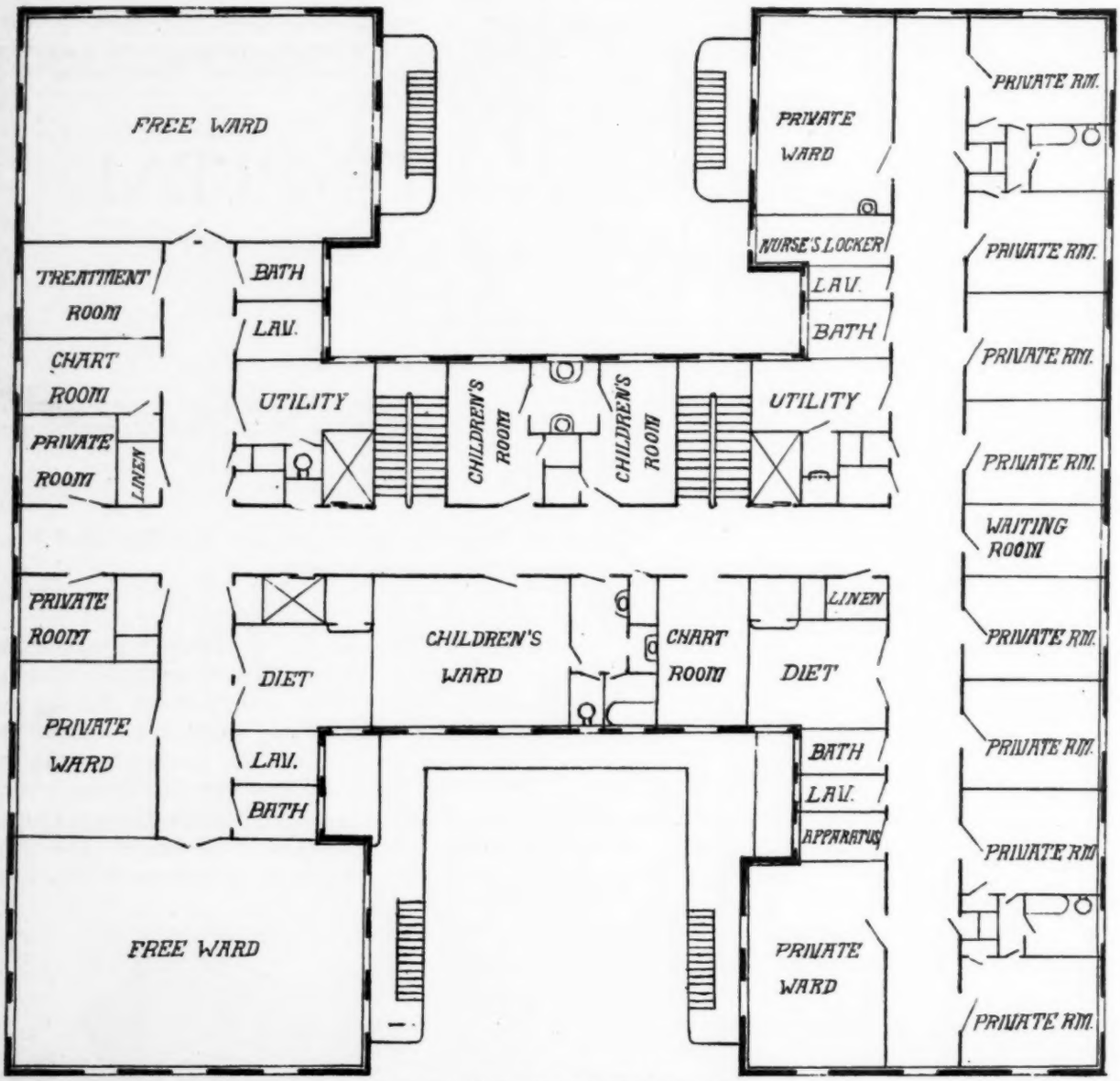

Fig. 2. Mount Zion Hospital—Third floor plan.

As one approaches the main building from the south he sees that portion allotted to the private rooms, offices, and dining rooms. The main entrance faces south on Scott street. On entering the building the offices lie on the first floor to the right, the dining rooms to the left. The entrance leads straight through the long hallway to the north side of the Esther Hellman building (the north wing), at which point is situated the ambulance entrance. The three elevators are located in the central portion of this main corridor. The kitchens are situated on the ground floor, and occupy the rear central portion between the two wings. Three large rooms are allotted to this use—the main kitchen, the general service and diet kitchen, and the special diet kitchen for private patients. Two electric dumb waiters communicate with the various floors, one to each wing. By this arrangement one force of employees can handle the food going to each wing, and send it up with the least delay. As many labor-saving machines as possible have been installed in this department—for example, automatic bread cutter, electrically operated meat and vegetable chopper, mechanical meat slicer, electrical coffee grinder, electrical potato peeler, dishwashing machines, and electrical silver polishers. The main stoves are fitted with crude oil burners, the vegetable cookers are supplied with steam, and gas furnishes the heat to the baking ovens. Various store rooms, drug rooms, chemical laboratory, x-ray laboratory, and receiving and examining rooms for clinic patients occupy the balance of this floor.

A description of the various departments of a typical floor—for example, the third, a plan of

Fig. 3. Mount Zion Hospital—Maternity department.

which is submitted—will give in a brief way the most comprehensive idea of the detail. The large wards are situated so that they have sun all the day in some portion, and occupy positions on either end of the north wing. They were designed to hold 14 beds, but for the present 10 were considered all that were necessary. These beds have small rubber-tired wheels, which facilitate the moving of the beds about the ward. Between the posts at the foot runs a rod so arranged that the extra blankets can be folded over it. Extension posts run up from each corner, and at a height of about 6 feet are connected by cross rods, on which curtains are hung. This allows the patient to be screened off, so that the usual cumbersome screens are not necessary. Each patient has a bedside table and tray table. The bedside table is of white enamel, with shelves opening to the rear, and is equipped with a rail in the rear on which to hang the washrag. The tray tables are designed with a square standard, so that the set-screw operates easily, and when set only lightly the table cannot slip or rotate on the shaft. The bath and toilet for each ward are situated immediately outside the door opening into the hall, as also is the treatment room.

The two large wards constitute the principal portion of this wing, but in addition it has a small 4-bed ward, a single room, and the various work rooms with which every wing and department is supplied. Thus we have a chart room, utility or sink room, toilets and baths for each male and female ward, diet kitchen and treatment room, porters' closets and drying room, and, lastly, numerous lockers, closets, and storage space.

The utility rooms are most complete. In each one we have a utensil sterilizer, instrument sterilizer, bed pan washer and sterilizer, bed pan warmer, gas stove, slop hopper, bed pan rack, urinal rack, and rack for ice bags and hot-water bottles. Adjoining each room is a small closet in which is an opening to the linen chute, shelves for storage of various articles and utensils, and a ventilated locker for specimens of urine, feces, and sputum.

Fig. 4. Mount Zion Hospital—Free ward. Note screens, rugs, and bed-rollers.

Fig. 5. Mount Zion Hospital—Private room.

The treatment rooms have their own sterilizers, washing-up tubs, and operating table, and have the usual various tables and basin stands and instrument cases. These rooms are used for minor operations and dressings.

Adjoining the treatment room and opening into the main hall is the chart room. It is supplied with a white enamel desk, over which is the annunciator board, and the intercommunicating telephone. One side of the chart room is lined with shelves and lockers, and a large storage closet for dressing trays opens into it. The charts are numbered and hung each on its own hook on the opposite side of the room above the desk.

A central position has been given to the diet kitchen, midway between the two main wards of the wing. In these rooms great care was used in arranging the various apparatus and tables in order to facilitate the transportation of trays and food from the dumb waiter to the patient. The warming table stands near the opening to the dumb waiter. A large table with several shelves occupies the central portion of the room. The cupboards line one side, and gas stoves, sink, and drain board are placed at the further end of the room. Each diet kitchen is equipped also with a Pasteur filter and a refrigerator.

The private wards on this floor are equipped much the same as the large wards, though only 4 beds are placed in each one. The south wing, for private patients, on each floor has the same chart rooms, diet kitchens, etc., as the free side of the hospital. The private rooms are fitted with brass beds in the better rooms, and with dark finish eucalyptus furniture. The rooms near the central hall have white enamel beds and furniture. Each room is equipped with a bed, dresser, bedside table, bedside tray, Morris chair, rocker, and straight chair. A wash basin with hot and cold water has been installed in every room.

The children's wards are located between the two wings off the main hall. The large ward for small children is on the west side of the hall; the two small wards are on the east side. The walls are decorated with children's pictures and Mother Goose rhymes, and, to further add to the pleasure of the occupants, a toy cabinet stands in the large ward wall filled with playthings. The children's furniture is finished in white, and the cushions and rugs are blue, so that altogether it forms a very attractive and handsome little ward.

The maternity department and the suites of

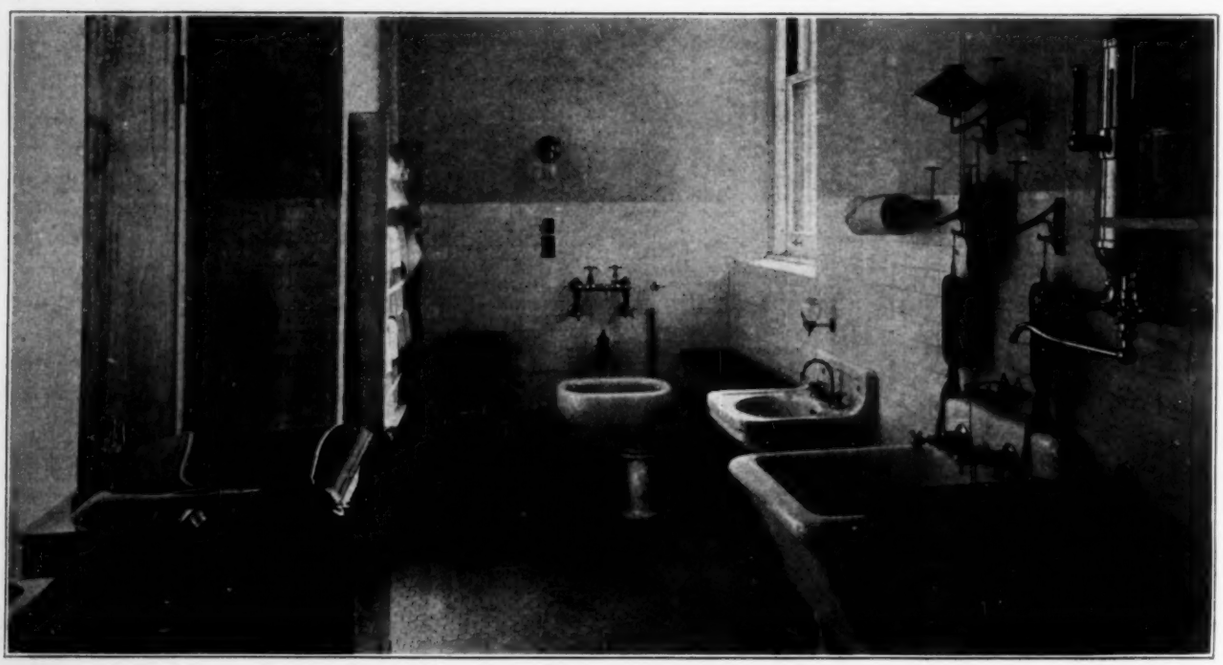

Fig. 6. Mount Zion Hospital—Utility room.

operating rooms are on the fourth floor of the north wing. Three main operating rooms are in this suite; the two larger rooms face north, the smaller room east and south. The sterilizer room is situated between the two larger rooms. Other rooms in this department are the doctor's dressing and locker room, nurses' work room, rooms for anesthesia, washing up, and instruments, and various closets and lockers for utensils and dressings. The walls of this suite are finished with white enamel tiling on the lower 6 feet; the upper portion with the ordinary hard wall plaster.

The maternity department is a complete unit in itself, as it is provided with its own diet kitchen, utility rooms, and other work rooms. There are a few things in this department to which particular attention should be called, particularly the method of bathing the patient on admission. The women who enter these wards, as a rule, require unusually thorough washing and cleaning before being put to bed. In the case of all other ordinary patients who enter the hospital the bathing is done in the examination and preparation room near the entrance to the Esther Hellman building, but it has been decided not to be a good plan to change the clothes and bathe the woman in the first stage of labor at such a distance from the delivery room. Thus a room was set aside for this purpose in the maternity department, and instead of the tub a marble bath slab has been provided. This is covered with a mat, and the woman in labor can be conveniently bathed with a spray nozzle and brush without being immersed. The same idea has been followed in the nursery, a bath sink having been installed. The baby, when being bathed, is laid upon a towel and sprayed with water the temperature of which is regulated by a mixing valve. Some new ideas have been embodied in the construction of the delivery table. It is shorter and wider than the usual table, measuring 3 by 5¾ feet. A railing has been built across the head, and at the foot a shelf has been placed which can be raised or lowered at will. The surface of the table consists of metal lattice work, which forms a firm surface, and over this a firm mattress has been placed. A large window has been built in the wall between the sterilizing and the wash room and the delivery room, and thus a nurse attending to this portion of the work can see when her services are required in the delivery room.

Fig. 7. Mount Zion Hospital—Diet kitchen. Note center table and blackboard.

On the fourth floor is also a large treatment room for eye, ear, nose, and throat. All operations coming into this service not requiring anes-

thesia are performed in this room. Adjoining this is a smaller, dark room, in which examinations can be made. The walls and tiling of this room are of olive green.

The ventilation of the hospital is provided by apparatus located on the roof and in the basement. It is of the hot and cold air type, and has proved to be very satisfactory, it having been found not necessary to operate it continuously. The fans are set going during the morning, when the operating room is busy and treatments are being given through the house, and for a short time after meals.

The engine room and laundry occupy separate buildings. The engine room occupies the basement, the laundry the ground floor, and the upper floor houses the male help. The engine room is reached from the basement through a tunnel through which the steam and water supply are transmitted. Adjoining the engine room two

Fig. 8. Mount Zion Hospital—Delivery room in maternity department.

large high-pressure tanks are placed, which supply the hot and cold water for the building. The water sterilizing apparatus is located on the roof, and supplies the treatment and operating rooms with sterile cold and hot water.

Two sun rooms, one on each wing, are located on the roof; the balance of the roof is used as a roof garden—that on the north wing for free patients, and that on the south wing for private patients.

It is planned in the near future to add a complete hydrotherapy department in connection with the hospital, and it will be placed on the roof of the north wing. In addition to this and the nurses' home, it is sincerely hoped that a new wing can be added to accommodate more patients, as already we have felt that the demands made upon the institution are more than it can fulfill even with its new building.

Elizabeth City to Have Up-to-Date Private Hospital.

The 50-bed private hospital soon to be erected at Elizabeth City, N. J., promises to be an artistic structure and modern in every particular. It will be located on an eminence on the banks of the Pasquotank river, commanding a broad view of the bay. The building will be of a pleasing semi-classical design, with broad Corinthian porticos, surmounted by an elliptical dome, open-air balconies, solariums, etc., with Spanish tile roof and broad, extending eaves. The general plan of the building is that of a Greek cross, 100 feet square, which is so placed with the points of the compass that sunlight finds its way into each room during the entire day. The buildings will be constructed of brick, veneer, and stone, and will have the most modern mechanical equipment in the way of heating plant, sanitary plumbing, elevators, dumb waiters, clothes chutes, electric lights, gas, bell system, etc. The ground floor, which is entered beneath the main portico, porte cochere, etc., will consist of general reception rooms, business offices, treatment rooms, baths, patients' rooms, wards, furnace rooms, and dining hall, with complete kitchen equipment. The main exterior approach to the principal floor is made by stone steps on either side of the portico, which is composed of four shafts more than 20 feet high, which stand out boldly against a red brick background. Passing through the portico, which is paved with English quarry tile, a vestibule is entered, thence through a reception hall to a central rotunda which, with its cross corridors, affords a complete circulation of air. To the right are the resident physician's quarters, head nurse's office, x-ray laboratory, patients' rooms, with private baths, etc. On ascending the stairs, thence to the rotunda, on the right is the operating, sterilizing, anesthetic and doctors' rooms, nurse's utility, bath rooms, wards, etc. The operating room is of the most modern sanitary plan, with tile floor, vitrolite seamless wainscoting, glass plates, etc., in semi-circular form, having a direct northern exposure, which gives an abundance of light. To the left are open-air balconies, private rooms, baths, etc. The third floor is arranged for nurse's quarters, with every idea of convenience, consisting of cosy bed rooms, connected up with cross corridors, which afford light and ventilation and lend a homelike appearance. The general manager of the hospital is Dr. John Saliba, B. A., M. D., C. M., a graduate of medicine and a master of surgery of the Edinburgh University of Scotland. After his graduation, Doctor Saliba visited the London, Paris, and Vienna hospitals. He served for several years as surgeon in St. George's Hospital, and during the Anglo-Boer War was appointed by the British Government civil surgeon to the English forces, in which capacity he served for two years with distinction.

Mrs. Anna Clinton Hermance has been appointed superintendent of Ann May Hospital, Spring Lake, N. J. Mrs. Hermance was formerly head of the Ridgevale Inn, Madison, N. J., also served at the Anchorage, Port Washington, and for a time was housekeeper for Dr. Walker's Sanatorium. Miss Rose M. McDonald, formerly head nurse in one of the large Los Angeles hospitals, has been appointed superintendent of the training school. Dr. Joseph A. Geis, formerly at Bellevue and Flower Hospitals has assumed the duties of house physician. At the last meeting of the board, Mrs. Samuel Heilner announced that a friend of the Hospital Alliance would pay the rental for the summer for a beautiful cottage near the hospital for a summer home for nurses. Mr. Cornelius S. Loder, the New York efficiency engineer, has recently completed his second visit to the hospital to check over the plan installed by him last winter.

THE VALUE OF CONVALESCENT LABOR IN HOSPITAL WORK.

Care Required in Selection of Patients and Their Employment—Abuses Should Be Avoided—Nurse Efficiency Tested in Directing Such Labor—Medical Skill Necessary for Discretion—Details of Handling Patient Labor.

By CHARLES F. SANBORN, M. D.
SUPERINTENDENT CINCINNATI GENERAL HOSPITAL.

THERE is so much to be said on this subject that one hardly knows where to begin or what to say first, especially when it is remembered what large amounts of money are uselessly spent every year for needless employees by municipalities, counties, and states.

With our large increase of alien population every year, coupled with the fact that many thousands of these aliens have little ambition or desire to make a living for themselves or get ahead in the world, to say nothing of their capability, but are inclined to become dependent when the slightest provocation or opportunity presents itself, the problem of patient labor becomes a very serious one in our invariably overcrowded hospitals, asylums, almshouses, and all other similar institutions. Millions of dollars are being spent every year in America in caring for patients, and incidentally in fostering dependency and a spirit of idleness among those who should be taught to help themselves to some extent at least, with the result that the burden of the taxpayer is rapidly reaching the breaking point.

It goes almost without saying that any person who knows anything about hospitals can visit any of them at almost any time, and see patients sitting around who might be doing something, this being more especially true in charitable institutions. Of course this evil is reduced very greatly in some of our best managed charitable institutions, but it probably exists to some slight extent in even the best. In many modern hospitals convalescent patients are discharged too soon in order to make room for other incoming patients, or in many instances to reduce the expenses of the hospital, and they immediately become public charges in some other institution because of their inability to wholly support themselves.

Public welfare workers in all communities are doing a wonderful amount of good in helping to partially solve the serious conditions, and no praise or credit is too great to bestow on them, but the efforts of these workers are wholly inadequate to cope with the situation, partly because there are never enough workers available. So the question at once arises as to the best way of handling and caring for these convalescent patients, who do not actually need hospital care any longer or must leave to make room for others, but who are not able to support themselves wholly and have no home to go to. In many instances such patients are sent to an infirmary or almshouse, which is usually managed in an incompetent manner, and where no system whatever is in vogue for the employment of patients; thus they again become public charges at once, and frequently remain so for the rest of their lives, just because no one cares enough about them or takes the trouble to think out any method or system of employment for them.

Some hospitals in New York and elsewhere have established so-called convalescent homes in the country, where the patients in question are sent, and where various forms of diversion and occupation are provided, with the result that large amounts of money are saved and patients receive great benefit and rapidly become self-supporting. If many of our other large hospitals would adopt some such scheme, which relates more especially to patient labor in the after-care of the sick and afflicted, the results would be of far-reaching benefit, as it is in just these cases that the most good is derived in many instances both to the community and the patient himself, in that chronic diseases may be prevented and the patient be taught industrious habits.

The after-care of indigent convalescent patients by means of occupation is a subject worthy of the most serious consideration and thought, especially from an economic standpoint, but the establishing of convalescent cottages in the country, where various forms of work can be developed, seems to be the best solution of the problem. Incidentally it may be said that this question of labor and employment is a very serious one among insane patients, for whose scientific care and so-called treatment communities are spending many millions of dollars annually in having highly technical examinations made and voluminous histories written, with a little laboratory work now and then; all this at enormous expenditure of public money, while the chronic dement sits in idleness, and with as little prospect of receiving benefit from the expensive treatment as there is of curing or restoring a cardiac valve which has undergone calcareous degeneration. Why not adopt the Wis-

consin idea, and give these patients employment which will perhaps benefit themselves, and will certainly help the community in a financial way? We now must consider the employment of convalescent patients while they are actually and necessarily confined as patients in an acute disease hospital, as indicated by the title of my paper.

WAITING ON OTHER PATIENTS.

It is a fact beyond dispute that patients confined to their beds in the wards of a modern hospital complain to their friends and relatives of not being waited on properly and sufficiently, and this one complaint has caused more trouble and annoyance to many hospitals than any other single criticism. The signal system for calling nurses is now installed in every well-constructed hospital, but the nurses can easily be busy temporarily with other work, so that the signals are not at once noticed, and then the nervous sick patient begins to find fault, whether it is justified or not. No signal system device is so perfected at present as to attract the attention of nurses who may be busily engaged in other work. It is just in such instances as these that the value of convalescent patients' help is well worth considering. The resourceful head nurse on the ward will constantly be telling the convalescent patients to watch the signals, or call the attention of the nurses to anything wanted by the bed patients, if the signal system is not in use or has not been installed. These patients who are usually up and around the ward, can easily relieve the nurses of much unpleasant and disagreeable work, and can oftentimes act as orderlies and thus reduce the pay roll of the institution. They can carry bed pans and urinals, assist in cleaning the floors and walls of the ward, carry bedding back and forth, assist in distributing the food at meal time, act as messengers, watch the conduct of visitors, and do a dozen other things that will come up every hour of the day on almost any ward. Patients who are weak and feeble will need assistance in getting out of bed, in going about the ward in a wheel chair, and in being taken to and from the clinic.

Of course it is some trouble to the nurse to be constantly teaching new patients to wait on other patients, and just this point will often demonstrate the fitness or unfitness of a head nurse to hold her position. The tendency is to keep patients who are ward workers for an unnecessarily long time until they remain for many weeks or months, especially in large charity hospitals, and the nurses have to be constantly watched to prevent this. The tact and resourcefulness of the nurses in some of these minor essential details help in no small degree to determine the standing of the training school, and even the hospital itself; in other words, the requirements for admission to the training school must be of a high order, and in this way intelligent nurses secured, in order to get the best results, and not have nearly 40 percent of the entire nursing force on each ward consist of merely unqualified women who are trying to do nursing duty, but who are merely attendants and do not belong to the training school at all, as is done in one of the very large charity hospitals in the middle West with which the writer is very familiar. Under such conditions as these not much can be expected in the way of development of convalescent patient labor, and certainly not much is obtained.

THE SERVING OF MEALS.

This subject has been merely mentioned in the above paragraph, but is well worthy of careful planning and thought, because the appetite of most hospital patients is determined by the manner in which their food is served to them, and the way in which it is prepared. On the average hospital ward in charity institutions there are never enough nurses to serve the food quickly enough to have it hot when it reaches the patient, and at the same time have it appetizing in appearance; so it is right here that the value of the assistance of convalescent patients becomes apparent. These patients, as a rule, cannot be trusted to arrange the trays for bed patients, but the nurse will have to supervise this herself. The patients can, however, be of very great assistance in the quick distribution of the food, and in the cleaning up of the ward after the meal is over.

No doubt some persons will say that these are all well-known and simple matters, with which everyone is familiar. Yes, this is quite true, and it is also true that these simple matters are most often overlooked and neglected, even though to a considerable extent the very reputation of the hospital stands or falls on the manner in which the food is prepared and served to its patients. So the question of the serving of meals becomes a very important one—in fact, so important that the good superintendent is constantly watching it, and seeing that the nurses are always instructed to do the same. Convalescent patients can often assist in the rough preparation of food, such as preparing vegetables to cook, washing kettles, etc.

This entire question is so important that it seems worth while to have each nurse on the ward detailed to assist in carrying out the plan; that is, one or more nurses could be assigned to instruct such patients as are in condition how best to assist in serving meals to bed patients; another nurse could be assigned to instruct patients how best to

wait on bed patients or assist in doing so; still another nurse could be assigned to instruct patients to assist in cleaning wards; another nurse could instruct convalescents how to feed bed patients who are unable to feed themselves, because there are never enough nurses to do this important service as it should be done. In this way a sort of organization is formed among the nurses, and the very best results are obtained. I believe it is not wise or economical to retain a lot of patients in a large city hospital just because they are able to do a little work, when in reality they are infirmary cases, and it will perhaps require six of them, more or less, to do the work of one able-bodied man—in other words, it is better to have a good employee and pay him for his work, not only because better results are obtained, but because it is cheaper. The question of just what patients to allow to work, and how long it is worth while to allow them to stay in a charity hospital, is one which requires constant study, not only on account of the economic side, but because of the practical results to be obtained, and it goes without saying that the superintendent must be experienced in hospital matters in order to do anything like justice to the institution, the patients, and the community at large.

The selection of patients to assist in the proper serving of food must be done with care, and of course none having infectious or contagious diseases should be considered, or those who are personally inclined to be careless or untidy. Here, again, the ability and judgment of the nurse is of the greatest importance, and to obtain the desired results the standard of the training school can hardly be made too high, as this shapes the results obtained in everything that is done on the wards, and reflects credit on everyone connected with the institution.

CLEANING.

The problem of keeping the hospital clean is very much simplified when the hospital itself is so splendidly equipped and constructed as is the new Cincinnati General Hospital, in which the very best vacuum cleaning machinery is installed in all of the basements, and extensions are made to connect with every ward in several convenient places, so that the cleaners can be attached quickly to any of the numerous openings in the walls of each ward at any time. Furthermore, every ward in this hospital, as well as the operating pavilions, are provided with small refuse and garbage incinerators, which are built into the walls in such a manner that the door of the incinerator is flush with the wall. These incinerators are heated by means of natural gas, which is the fuel used for the entire hospital, including the power plant, and the incinerator gas burners are so constructed as to produce great heat. By means of these appliances all dust and floor sweepings can be quickly removed from the wards, and all soiled dressings, garbage, etc., can be quickly and conveniently burned on the ward. Such arrangements as these are, of course, ideal, but unfortunately not all hospitals are constructed in this way, and then the problem of cleaning becomes more difficult, although plenty of cleaning will have to be done even where such ideal conditions as above described exist.

Nothing serves more to increase the efficiency of the hospital in the eyes of the public than clean wards and corridors, and many an institution has received undesirable publicity because of a lack of constant attention to this detail. Many hospitals for the general public constantly have large numbers of employees who do nothing but clean and scrub, and the expense to the municipality is, of course, very great. A competent superintendent can reduce the number of these employees by carefully planning the best method of doing the work with the least amount of paid help, and it is here that convalescent patient labor becomes most valuable. These patients can wash windows, floors, walls, dust furniture, and do many other things of a like nature. One important thing is to arrange to have all this cleaning done on the wards before the attending staff make their usual daily visits, as there is nothing more annoying to an attending physician than to have cleaning done on the ward while he is trying to examine a patient.

Here, again, arises the question of seeing that patients who do a little work do not remain too long in the wards of a charity hospital. To decide this problem requires the experience and judgment of a medical man, and in no event should patients be allowed to remain for long and indefinite periods because they have political friends. Scandals due to this have arisen in many public hospitals, and notably in Cook County Hospital, which was justly characterized not long since by a well-known hospital expert as the worst administered hospital in America, presumably because of the political appointees that have been at the head of it for many years past. Such things as this can be very easily avoided by adopting the simple rule of having the names of all patients who have been in the hospital more than sixty days reported to the superintendent at the end of each month, who will then have each case investigated through the public welfare bureau or otherwise, and in this way get rid of all those who are undesirable.

I cannot emphasize too strongly the necessity of having a well-organized system throughout the hospital for getting convalescent patients to assist, not only with the cleaning, but in all other kinds of work. If this is properly planned, many thousands of dollars can be saved to the hospital every year, and the patients themselves benefited very greatly. In order to get the desired results, the hospital administrator must be a man of training and hospital experience—almost necessarily a physician—and under these conditions the right sort of man can accomplish results which no inexperienced man can possibly get. A well-conducted hospital must be as thoroughly organized as a well-conducted business establishment, and in order to do this the superintendent must be a man with large hospital experience, which point is demonstrated not only in the organization of patients to assist in the work, but in every other detail about the hospital.

Undoubtedly the time will soon come when all American hospitals will be standardized, and then in each instance the extent to which convalescent patient labor is utilized will play no small part in the rating given to the hospital. I believe that all good hospitals should have a well-organized "end result" or "follow-up" system applied to all patients who have left the hospital, which system can be easily kept in the form of a card index, and be very useful to the attending staff and in completing the records of the hospital. Such a system is bound to increase the efficiency of any hospital in a very marked way, and to carry out the routine work in connection with such a system in a large general hospital, or to assist in doing so, it is quite possible to utilize some of the best convalescent patients. The committees on the standardization of hospitals of the American Medical Association and of the American Hospital Association have already done some good work along this line, and it is to be hoped that this work will be continued.

The clothing of patients in a large public hospital is always a source of worry to the authorities, and of adverse comment by visitors, relatives, and friends of patients. It is my belief that a small tailor shop can be established in almost any hospital, and all clothing belonging to patients can be sterilized and afterward cleaned and put into a presentable appearance in this shop. The hospital clothing worn by patients can also be mended and kept in good order in the tailor shop. Convalescent patients can be made very useful in helping to do this work in the tailor shop; thus, at a very small expense, the appearance of the patients may be kept at a high standard, and the efficiency of the hospital increased at least in the eyes of the public. Such patients can also be used to great advantage in helping to keep the hospital grounds in a neat and tidy condition, and some employee should be regularly assigned to supervise this work and see that it is done. There is probably no other single problem in hospital administration that is more neglected than convalescent patient labor, and yet it is one of the most important ways of increasing the efficiency of the hospital.

If I may be allowed to digress a little from my subject, I will state that all hospitals should be standardized, and as a result the efficiency in charity hospitals in particular would almost necessarily be increased, and experienced men capable of getting results would be placed in charge of them. No great business corporation would think of putting a politician or totally inexperienced man at the head of one of its important departments. So, why should this very thing be tolerated in great municipal hospitals, and the sick poor made to suffer in consequence? If there is any place in the world where efficiency should be demanded, it is in hospitals that are caring for the sick, whether it be in the utilization of convalescent patient labor, or in taking advantage of any of the other multitudinous problems which are constantly confronting any hospital administrator.

NEW YORK HEALTH SERVICE BROADENS.

Department Has Arranged With Great Insurance Companies to Circulate Health Literature.

The New York Department of Health has just completed arrangements by which its service to the public can be greatly increased. The following announcement occurs in the weekly bulletin of the department:

In view of the mutual interests existing between the health authorities and life insurance companies in the promotion of public health, it is not surprising to find that these companies are very willing to cooperate cordially with this department in carrying on an extensive educational campaign among the people of this city.

The Department of Health has heretofore frequently found it difficult to quickly reach large numbers of people. Press bulletins cannot be relied on with certainty, as the newspapers frequently cannot find space to print them. Lectures, exhibitions, even moving pictures—all reach relatively small audiences. Circulars have been distributed through the schools, but this method has certain limitations.

After a conference with Dr. Lee K. Frankel, of the Metropolitan Life Insurance Company, and Mr. Edward Gray, of the Prudential Life Insurance Company, these companies have kindly placed the services of their agents at the disposal of the Department of Health for the distribution of public health literature. This means approximately three thousand agents visiting the homes of 750,000 families weekly. How important and valuable this cooperation will be can readily be imagined. The department seeks further cooperation along this line, and will be pleased to hear from organizations which are prepared to contribute assistance.

Dr. Harvey W. Wiley has been elected president of the board of directors of the Columbia Hospital for Women at Washington, D. C.

SEATTLE CHILDREN'S ORTHOPEDIC HOSPITAL.

A Splendid Philanthropy Built Up From Small Beginnings—Women Trustees Have Fine Business Organization—Some Interesting Features of the Service.

By MRS. ANN B. L. STEDMAN, Seattle, Vice-President.

THE Children's Orthopedic Hospital of Seattle is peculiar in the history of hospital management in that the administration of its affairs is governed in every particular by a board of trustees and officers composed wholly of women. Strange as it may seem, there has never been a dissension or disagreement in the seven years of the hospital's existence. The present superintendent and her assistant have been in charge for six years, and the chiefs of staff have been the same from the beginning. When asked by a Chicago surgeon how this could be possible, the orthopedist present and the superintendent agreed that everything reasonable had been done for their comfort and convenience, and there had been *no interference* by the trustees.

The hospital was founded in 1907. To test the need of orthopedic and surgical work for children in the Northwest, a ward in the Seattle General Hospital was secured through the cooperation of Miss Hall, the superintendent. At the end of a year the work had progressed so rapidly that it was necessary to build what was then called the fresh air house, a small one-story building with two porch wards and one house ward, whose total capacity was twelve beds. This small house became inadequate after two years' work. In 1911 the new hospital, with a capacity of 50 beds, was opened. In 1914 the waiting list demands enlargement of the new building. This brief history answers the question of the need of an orthopedic hospital in the Northwest. The nearest hospital of the kind is in St. Paul on the east and San Francisco on the south. Patients come to us from every northwest state, from British Columbia, and even from Alaska. This year brought an infantile paralysis case from Ipoh, Malay States. The eight-year-old son of a missionary was sent to us in charge of a Malay boy only fifteen years old. These two boys traveled the entire distance to Seattle, that the little patient might be in this hospital under one of our orthopedists.

The main exposure of the building is south. The frontage is 103 feet, and the depth is 46 feet. The building is of reinforced concrete, brick faced, and sanitary in every respect, even to a dressing incinerator in the dressing room. It is fireproof throughout; the walls and ceiling are hard plaster; the floors are cement—some left in natural, some covered with raecolith and some with battleship linoleum. Present arrangements provide four wards and three private rooms, operating room, surgeon's dressing room, x-ray room, plaster room, receiving room, drugs, sterilizing, six baths, eleven toilets, a diet kitchen on each floor, a main kitchen, nurses' dining room, housekeeper's and servants' quarters, ample store room, laundry completely equipped, and automatic electric elevator. The old fresh air house is being remodeled for a dental clinic and orthopedic gymnasium, and arrangements are on foot to establish a contagious ward. Particular stress is laid on the open air treatment furnished in this hospital, the mild winters and cool summers of Puget Sound making that a strong factor in the treatment of such cases as are brought to us.

Fig. 1. Children's Orthopedic Hospital, Seattle—East front.

The staff of surgeons and physicians is composed of the most eminent men within reach. There are four chief surgeons, each having one associate. Each chief and his associate serves three months at a time, making one service each year. The chiefs are appointed by the trustees, and the associates are suggested by the chiefs and appointed by the trustees. All serve without pay. Any reputable doctor can bring his own cases to the hospital as pay cases, either in the ward or private rooms. Patients are of three classes—full pay (either with own physician or

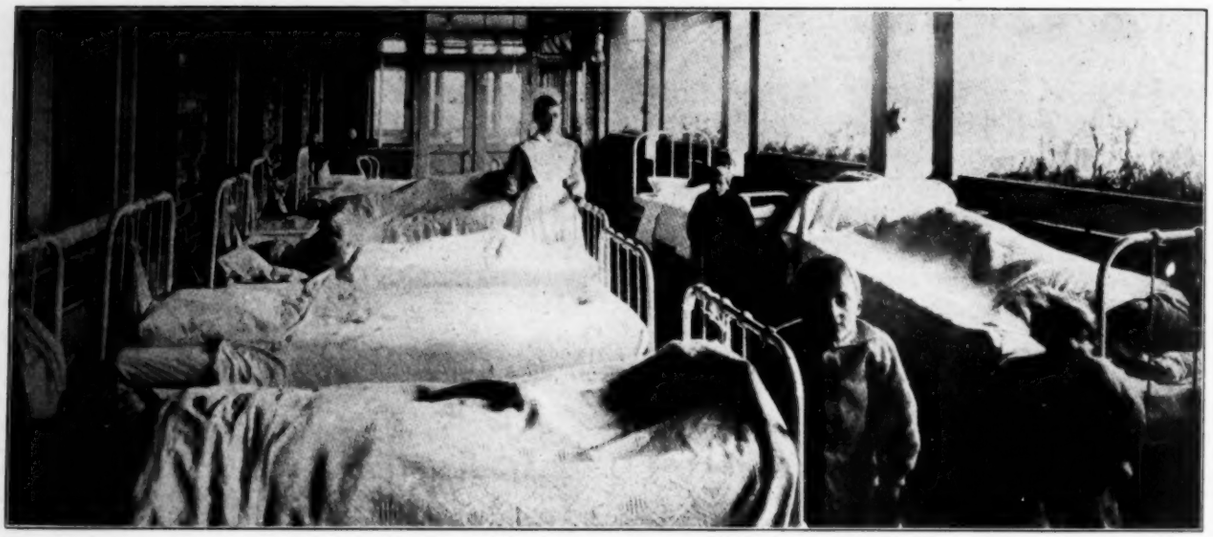

Fig. 2. Children's Orthopedic Hospital, Seattle—Open-air wards.

staff physician then on duty), part pay, and charity. The part pay and charity patients must be attended by the staff surgeon on duty at the time they enter. The charity patient always has precedence when space is limited, but an effort is made to ascertain the circumstances of the family to the end that parents are required to pay as much as they can afford for the care of their children, toward the running expenses of the hospital. In 1913 32 percent of running expenses was paid by patients; 68 percent was entirely gratuitous, and had to be defrayed from the resources of the hospital.

All patients, except full pay cases, must be examined in the receiving room, and, if admitted, spend a specified time in the observation ward before being transferred to the ward suitable to the age and condition of the child. The out-patient department is a large part of the work of this charity in that it cares for those who have been in-patients and for those who can be purely out-patients. The children come from such distances that the need for a convalescent house is keenly felt. Many who could be out-patients have to be retained in the hospital for treatment that could be given either in a convalescent home or as an out-patient. The regular morning for new patients is Tuesday, when a chief or staff is present at 11 a. m. to examine new cases. The doctors carry over cases that have entered the hospital during their term of service, and many have private cases; so, in order to care for all, each doctor has his own morning other than the regular Tuesday service. The number of children treated in this department during 1913 was 950; number of plaster casts made, 425.

The nursing force the past year (1913) has consisted of three graduate nurses and five pupil nurses. These latter have three months in the orthopedic during their senior year in hospitals

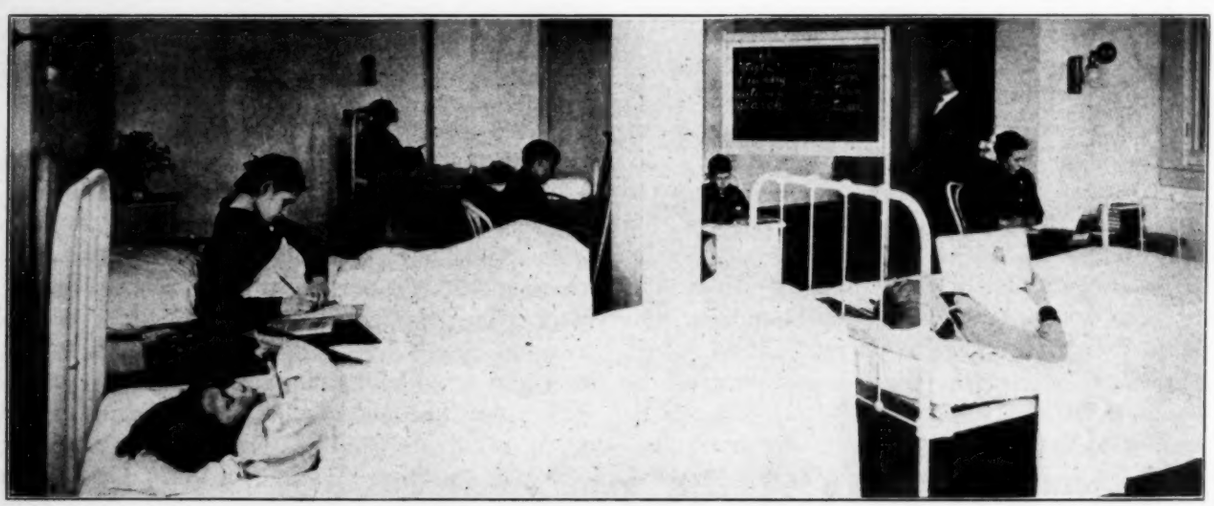

Fig. 3. Children's Orthopedic Hospital, Seattle—The school.

that affiliate with the orthopedic. Each year the number of children applying increases so rapidly that the force of nurses is constantly being increased and special nurses employed.

Each department of the hospital is under the care of a committee of women, one or more of whom is a trustee. The investigating committee looks into the circumstances of the family, the condition and treatment of the child before he comes to the hospital, and, when necessary, after he returns to his home. The hospital committee assists the superintendent in keeping up the surgical supplies, consults with doctors and nurses in regard to children under treatment, and also arranges matters pertaining to selection and disposition of nurses. The house committee has charge of all household furnishings and the renewing of household supplies, clothing, etc. The ways and means committee investigates all schemes presented for the raising of funds, and, in consultation with an advisory board of bankers and business men, invests the money of the hospital, and has charge of any special affair for procuring money. The buildings and grounds committee attends to all repairs and alterations of the hospital building and buildings belonging to the association, and the upkeep of grounds and property in general.

A unique and successful feature of the hospital work is the dividing of the city into districts, each district having a guild of women workers who are members of the hospital association. These guilds work independently of each other, have their own officers, and dispose of their money for any hospital need they may select. A favorite object is the support of one bed for a specified time, usually a year, paying a fixed sum and naming the bed for the time specified. There are a number of beds so named and supported in the hospital, and the guild or person that contributes in this manner feels a particular interest in the occupant of the bed, continuing this interest after cure or transfer to out-patient department.

A meeting of the officers of various guilds is held once a month, when a resume of the month's work at the hospital is presented to them, together with a list of requisitions from the superintendent. The representative of each guild selects from this list some article needed and sends it to the hospital during the following month. In this way interest is stimulated and the needs of the hospital supplied. One guild makes all the bed gowns used by the children, which is quite a task since the new building was opened.

The support of the Children's Orthopedic Hospital comes from many sources—memberships, special donations, patients' fees, and interest on endowments. The response to the call of the crippled child is every ready from most unexpected quarters. A poor man, crippled from childhood, with no such hospital as ours to straighten his back when he was an infant, collects money, a few pennies at a time, from friends equally poor as he, bringing to the hospital every now and again a few dollars to help some boy attain a more equal footing with his fellows. This same crippled man each year plucks his geese and brings one or two fine pillows to the hospital as his own offering. In the autumn he makes apple jelly for us, keeping ever in mind the saving of some child from the lifetime of suffering that he has had to endure. What billionaire can approach such giving as this!

Fig. 4. Children's Orthopedic Hospital, Seattle—The kindergarten.

We have no state, county, or city assistance. The hospital is a private charity. Children have come to us from state institutions, but they have been charity cases, with no pay to us from the institutions from which they came.

Not only orthopedic and general surgeons give of their time and skill, but also the eye, ear, throat, and nose specialists, neurologist, radiologist, and dentists, so that when a child leaves the Children's Orthopedic Hospital of Seattle he has

had attention from the best specialists and every defect has been remedied that could be corrected, and his general health has been thoroughly built up.

Since the beginning of the work in 1907, 1,004 cases have applied for admission. Of this number, 153 have been refused for reasons stipulated in our rules, and 851 have been accepted.

All money given for the crippled children goes directly to their care, the only salary outside of the running of the hospital being $15 a month to a bookkeeper. All work in connection with the duties of treasurer, secretary, etc., is done by women whose hands as well as hearts are at the service of this charity.

For the little children we provide a kindergarten. The older children are taught by a public school teacher of long experience, who gives them all the advantages they would receive were they able to attend the grade schools. A manual training department is about to be installed. Sunday-school lessons are provided and taught by willing workers, and a story-telling hour every week is looked forward to eagerly by every child in the hospital. For those who are very ill a special little story is told at the bedside.

Sunshine and happiness are the keynotes of our work—sunshine from the wonderful climate of the Puget Sound country, as well as from the joy of making straight the deformed and giving relief from pain; happiness in giving the child a future of usefulness and pleasure where before he had little to anticipate beyond being a public charge full of unsightly agony. The orthopedic smile is a byword in the hospital, asking, in the words of an eminent minister interested in the work, "Help me NOW, that I may become a self-sustaining citizen."

SURGICAL OPERATIONS AND SURGICAL DRESSINGS AT THE JOHNS HOPKINS HOSPITAL.[1]

All Assistants at Operations Are Physicians—Two Nurses Always Present—Surgical Supplies Kept and Sterilization Done at Central Point=Simplicity of Tables and Furnishings.

By RALPH B. SEEM, M. D., Assistant Superintendent.

MAJOR operations are performed in three departments of the hospital—the general surgical, the gynecological, and the obstetrical. As there is similarity of procedure in all three departments, the method followed in the general surgical service will be described in detail and differences in the other services will be noted.

All patients on the surgical service are seen within twenty-four hours after admission by the resident surgeon or his assistant, who examines them and makes a note on the history, describing in detail the surgical conditions found. Emergency cases on admission are taken at once to one of the operating rooms. Other cases, admitted at hours when the surgical staff is busy, are given a bath and put to bed. If the nurse thinks a patient needs attention, she telephones to the head nurse of the operating room to have a doctor sent at once to the ward.

After the rounds have been made, the resident surgeon and his assistant make up a schedule of operations for the following day.

The patients are ordered for operation by the resident surgeon or his assistant. The routine orders for preparing a patient for operation are a soap suds enema to be given early in the morning and that breakfast be omitted. The orders are signed by the resident or his assistant, and all nurses are instructed not to carry out any order which has not been signed by a member of the staff.

When a patient is to be brought to the operating room, the head nurse in the ward is notified by the nurse in charge of the operating room. A nurse from the ward takes the patient to the operating floor, either in a wheel chair, or the patient may walk if he prefers to do so and his condition warrants it. If the patient requires the use of a stretcher, an operating room orderly takes a stretcher to the ward for the patient. With the patient is sent his chart and history, in which is recorded a complete physical examination, a note on the surgical condition, a urinalysis, and any other examination which a particular case might indicate.

On arriving on the operating floor the patient is taken into the anesthetizing room, where he is undressed and an operating jacket is put on him. He is placed on a wheel stretcher and is given the regulation hypodermic injection of morphia .1 grain and atropin .01 grain by the nurse in charge of the anesthetizing room. The field of operation is then dry shaved by an orderly, or by the doctor if the patient is a woman. It is then explained to the patient that the duration of the anesthesia can be shortened by completing the

[1]This is the eighth paper in the series on Internal Administration at Johns Hopkins Hospital; last month, "Purchase and Distribution of Medical and Surgical Supplies."

preparations on the operating table before starting the anesthetic. If the patient does not object, this procedure is followed. The field of operation is then prepared by one of the surgeons, who has cleaned up to assist. He applies Churchill's tincture of iodin and places sterile covers on the patient. The anesthesia is then started.

All anesthetics are given by a trained anesthetist, or under his direction. The anesthetic used and the method of anesthetizing varies with the condition of the patient and the character of the operation. The combination of nitrous oxid, ether, and oxygen is employed in many cases. In operations on the breast and on the thyroid gland nitrous oxid gas is given throughout the operation. The anesthetist keeps a chart, on which he records the patient's pulse rate, the duration of the anesthesia, and the kind and amount of anesthetic used. In special cases the blood pressure is also recorded.

When operating on a patient in which the diagnosis of the case is doubtful, a microscopic examination of a frozen section of the tissue is made in a few minutes by one of the surgeons. His report often determines the character of the operation to be performed.

When the operation has been completed, the patient is transferred from the operating table to a bed that has been wheeled into the operating room from the recovery room. A doctor goes with the patient to the recovery room, and leaves any orders that may be necessary with the nurse in charge. Later, when the patient has recovered sufficiently from the effects of the anesthetic, he is taken to the ward in the recovery room bed by an orderly from the operating room, accompanied by one of the doctors, who leaves orders for the patient with the ward nurse who receives him.

In the general surgical operating suite there are three operating rooms and the accessories—an anesthetizing room, examining rooms, and dressing rooms—and also a supply room and a recovery room.

The force consists of a graduate nurse in charge, an assistant, who is also a graduate, six pupil nurses, and two orderlies. In their senior year the nurses spend a period of three months between the general surgical and gynecological operating rooms.

In the supply room is stored a standard amount of sterile and unsterile dressings and surgical supplies of all kinds—catgut, needles, hypodermic syringes, etc.—which are in constant demand. These dressings—pads, bandages, sponges, etc.—are prepared by the nursing staff, and the supplies are kept in working order and up to the standard quantities by them under the direction of the head nurse. The dressings are not sterilized here, but sent to the general surgical supply room for sterilization by an orderly, who has special charge of this work. In this way serious accidents with the sterilizers are much less likely to occur than when they are operated by inexperienced nurses. Raw catgut is prepared by the nurse in charge, because the technic must be perfect, and the work should not be left to the care of a pupil nurse.

Two nurses are present during each operation. One nurse cleans up and looks after the sponges, dressings, etc., and the other acts as general utility nurse, getting special instruments that may be needed, or performing any one of a number of small services needed by one of the operating staff. Four doctors clean up for each

Fig. 1. Light in the general operating room—250-watt Mazda lamp.

operation—the operator, two assistants, and the instrument man. In cleaning up for operation, the hands and forearms are thoroughly scrubbed with a fiber brush in hot soap and water. The disinfecting solutions used for hand sterilization vary somewhat with the preference of the surgeon. The methods employed are as follows:

1. After the hands have been scrubbed, they are immersed in a saturated solution of potassium permanganate and kept there until they are stained a mahogany brown color. They are next transferred to a saturated solution of oxalic acid until the stain is removed. The hands and forearms are then soaked in a bichlorid solution (1-1,000), and finally rinsed in salt solution, in which the gloves are put on.

2. The hands and arms are washed as above and then soaked in 70 percent alcohol for five minutes. The gloves are put on in sterile water or salt solution.

The instrument man selects the instruments for each operation, attends to their sterilization, and "hands instruments" as they are needed to the operators. The instruments are cleaned by the nurses. Each day the assistant nurse in charge looks over the instruments which have been used, to see whether they need to be repaired or sharpened, or replaced.

Except in emergency cases, all operations are scheduled for the morning hours. In order to avoid confusion, a schedule has been adopted which states the days and hours that the operating rooms may be used by different members of the surgical staff. The three operating rooms are often in use at the same time.

When artificial illumination is required to light the field of operation, a comparatively simple fixture has been found to be very satisfactory. The light, which is a 250-watt Mazda lamp, is suspended over the operating table 7 feet above the floor.

The beds in the recovery room are mounted on bicycle wheels, 12 inches in diameter. The wheels turn on swivels, and are so placed that they do not project beyond the ends of the bed.

The gynecological operating suite consists of an operating room, with the usual accessories, and a cystoscopic room. Operations are performed with the aid of reflected light. A Koenig's light casts its rays on a mirror, which reflects the light on the operating table. The mirror is suspended from the ceiling in such a manner that the angle of reflection may be changed. This light has been found a distinct advantage in lighting the field of operation, especially in pelvic work.

The nurse in charge is a graduate, with three pupil nurses to assist her in the work, and also an orderly. Five doctors clean up for operation—the operator, two assistants, the man who hands instruments, and the "sponge man." Two nurses are constantly present in the operating room.

In this service the routine hypodermic injection of morphia ⅙ grain and atropin 1/120 grain is given in the ward before the patient leaves for the operating room. Nitrous oxid, followed by ether, is the anesthetic used in all abdominal cases. After the patient has been anesthetized, one of the surgeons applies 70-percent alcohol and shaves the abdomen. The perineum is then shaved. Soap and water is used, followed by a 1-1,000 solution of bichlorid and 70-percent alcohol. The vagina is then cleaned in the same

THE JOHNS HOPKINS HOSPITAL.

DAILY ORDERS—SURGICAL SUPPLIES.

Ward..... Date.....

Gauze, wide .....
narrow .....
pads .....
Bismuth drains, wide .....
narrow .....
in tubes .....
Iodoform drains, wide .....
narrow .....
in tubes .....
Cotton pads .....
Handkerchiefs .....
Old linen .....
Sponges .....
Silver foil, large.....
small .....
Squares for instruments .....
infusion bottles .....
Towels, dressing .....
sterile pks. .....
G. U. .....
Abdominal gauze .....
cotton .....
Perineal pads .....
Pledgets .....

Fig. 2. Daily requisition form. Actual size, 5x6 inches.

THE JOHNS HOPKINS HOSPITAL.

WEEKLY REQUISITIONS—SURGICAL SUPPLY ROOM.

Ward..... Date.....

Bandages, gauze, 6-in.....	Gloves, heavy.....
4-in.....	medium.....
3-in.....	sponge.....
muslin, 6-in.....	thin.....
4-in.....	tub.....
3-in.....	Gauze, absorbent.....
Binders, surgical.....	bandage.....
T.....	Mouth gags.....
scultetus.....	Muslin, bandage.....
Buckles.....	oil.....
Bobbin.....	Needles, intestinal, No. 9.....
Bottles, infusion.....	No. 6.....
Cement, rubber.....	Reels, glass, Halsted.....
Cotton, absorbent.....	spool.....
common.....	Silver foil.....
sheet.....	Splints, approximation.....
Covers, broom.....	board.....
chloroform inhaler.....	coaptation.....
Hampton pad.....	Silk, black.....
table.....	white, braided.....
tray.....	spool.....
Compresses.....	Sea sponges.....
Crinolin, bandage.....	Slings.....
plaster.....	Stupes.....
Crepe lisse.....	Silkworm gut, black.....
Crayon.....	white.....
Cheese cloth.....	Surgeons' lint.....
Dusters.....	Specimen jars.....
Door pads.....	Tubing.....
Damask.....	Tape measures, large.....
Extensions, cord.....	small.....
spreaders.....	Wash cloth.....
soles.....	Webbing.....
Flannel.....	Wire, picture.....
Finger stalls.....	

Fig. 3. Weekly requisition form. Actual size, 7x11 inches.

manner and the patient is catheterized. When the patient has been placed on the operating table, a 3½-percent solution of Churchill's tincture of iodin is applied to the whole abdomen. This is followed by a 7-percent solution of the same applied only to the field of operation. After the operation the patient is taken at once to the ward by an orderly, accompanied by one of the doctors.

Fig. 4. Operating table in the general operating room. (These tables are shown because of their simplicity.)

In the obstetrical service the operating room is in connection with the maternity ward. The ward nurses make up all supplies and dressings used in this department, look after the operating room, and attend operations, most of which are on emergency cases.

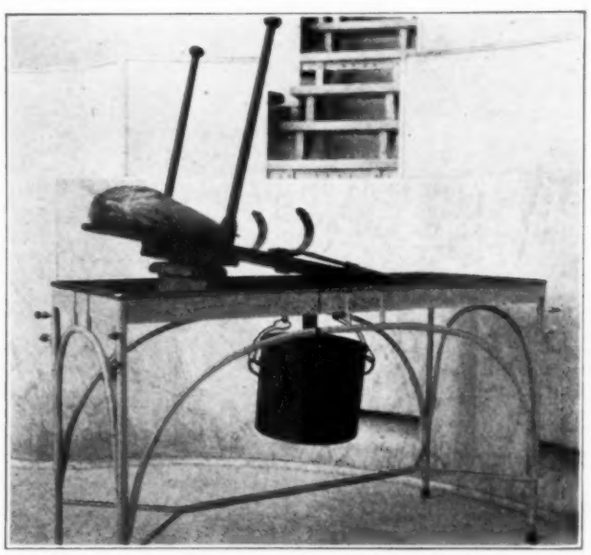

Fig. 5. Same table as used for genitourinary work.

Chloroform is the anesthetic used. When anesthesia is continued for a period longer than twenty minutes, the anesthetic is changed from chloroform to ether.

The vagina is not cleaned up in maternity patients, but in other respects the preparations before operations are practically the same as in the gynecological operating room.

The surgical supply room is in charge of one of the assistants to the superintendent of nurses. From six to eight probationer nurses are assigned for duty here. In addition, there is a maid who stretches the washed gauze, and an orderly in charge of the sterilizers.

In this department are stored the surgical supplies used throughout the hospital. All of the dressings used in the wards and some special dressings used in the operating rooms and dispensary are made up and sterilized here. Dressings made up in other parts of the hospital are sent here to be sterilized. A nurse packs the dressings into the sterilizer and controls the length of time the materials are to be sterilized and the degree of pressure obtained.

Fig. 6. Gynecological operating table.

These supplies and dressings are ordered on daily and on weekly requisitions. Nurses are sent by the three surgical departments to the supply room for the supplies issued on *daily* requisitions. The supplies ordered on *weekly* requisitions are delivered by the orderly from the supply room.

The dressings most commonly used are made up as follows:

Wide gauze.—Cut in 3-yard lengths; fold lengthwise twice and roll evenly. Two rolls in each package. (Used in dressing breast cases.)

Narrow gauze.—1 yard 28 inches long (4 inches cut off end of fold and used for sponges). Fold lengthwise three times and roll evenly. Two rolls in each package. (Used in dressing breast cases and head cases.)

Gauze pads.—1 yard 28 inches long. (Cut as narrow gauze.) Fold crosswise once, then lengthwise once, then crosswise into three, with raw edges in. Then plait into four even folds. When finished should be 10 inches wide. Two pads in each package. (Used as abdominal dressings.)

Cotton pads.—22 to 24 pads are made from common cotton, rolls, 1; absorbent cotton, rolls, ¼; gauze, yards, 8. How made: common cotton, ordinary thickness; absorbent cotton, ¼ or ⅛-inch thickness; gauze for each pad 12 inches wide, 32 inches long, cut lengthwise. Place cotton flat on table, cover with absorbent layer, cut 7x13 inches. Cover with gauze. Plait in three folds; 3 pads in package. (Used for drainage cases.)

Handkerchiefs.—Cut 18x14 inches. Four from each yard of gauze. (Sponges cut from double fold as in narrow gauze.) Ten in package.

Sponges.—Made from strips saved from above and cut in half, or from new gauze when necessary. Twelve sponges 9x12 inches from each yard. Turn in cut edges. Roll over fingers and tuck in end. Fifteen in each package.

Abdominal gauze.—Cut 12x36 inches lengthwise of gauze. Fold in half crosswise. Cut edges folded in 1 inch at both sides. Fold ends in 4 inches twice, making pad 10 inches long and 4 inches wide. Six in package.

Abdominal cotton.—Absorbent cotton one-half original thickness. Cut in 12-inch lengths. Plait in three folds. Two pads in each package.

Pledgets.—Absorbent cotton roll, one-half to each bag.

Perineal pads.—56 to 60 pads are made from common cotton rolls, 1; absorbent cotton rolls. ¼ or ⅛; gauze, yards, 15. Spread cotton as for cotton pads. Cut in 10-inch blocks, each block cut in 4 lengthwise, so that pads are 10 inches long. Gauze for each pad width 9x24 inches, cut lengthwise of gauze.

Delivery pads.—30x24 inches. Foundation muslin. 1, layer of muslin bandage ends and waste washed gauze (pieces too small to be used for dressings); 2, layer of picked cotton; 3, cover of bandage gauze; muslin foundation and gauze sewed together around from side; then the whole pad quilted here and there to maintain uniform thickness; sterilized; after use sent to laundry, washed, returned to surgical supply room, contents removed, used for making picked cotton, old foundation of muslin and cover of bandage gauze refilled, and used again and again until worn out.

Bismuth and iodoform gauze.—Into 6 ounces of lukewarm normal salt solution dissolve enough castile soap to make the solution slightly cloudy. Gradually pour this solution into 10 ounces of bismuth or iodoform. The resulting liquid must be a uniform mixture. If it becomes curdled, it is useless. The gauze is then thoroughly saturated with this solution and made up as follows:

Bismuth and iodoform, wide.—Cut ¾ yard long, 4 inches wide, cut edges folded in. Strip then folded crosswise in half and rolled from open end; 2 inches wide when finished. Amount of gauze required for twelve pieces, 1⅛ yards. Put up in packages of six in muslin, two in each.

Bismuth and iodoform, narrow.—Made in same way, except drain is 1 inch wide. Gauze needed, ¾ of a yard for twelve pieces.

Bismuth and iodoform, in tubes.—Cut 12 inches long, 2 inches wide. Cut edges each folded in ½ inch, then fold lengthwise. When finished, ½ inch wide. Gauze needed, 8 inches for twelve pieces.

Sterilize under 7 pounds pressure of steam for twenty minutes.

In making dressings the grades of materials used are as follows: unbleached muslin, known by the trade names of Brandon Mills B.B. sheeting, and Plaza L.L. sheeting is used for bandages. Dressing gauze, bleached, has a thread count of 20x12. Bandage gauze, bleached, has a thread count of 32x26.

Three kinds of cotton are used—standard grade absorbent cotton; common cotton, known by the trade name of Clyde batts; and picked cotton, which is made from pieces of washed gauze which are not suitable to be made into dressings or bandages.

THE AMERICAN HOSPITAL ASSOCIATION.

An Urgent Reminder of the Convention to Members and Others Who Should Be Interested.

Dr. H. A. Boyce, the energetic secretary of the American Hospital Association, has just issued the following urgent appeal to the members of the association and others who should be interested in the important program to be presented at the coming convention:

This is to remind you of the great convention of the American Hospital Association to be held at St. Paul on August 25 to 28, inclusive. Let us unite to make this meeting the greatest in the history of the association.

Read the program and be convinced that it is one of the best ever issued. Problems, difficult and complex, will be discussed by able hospital administrators. Much time will be given to the discussion of matters relating to the small hospital. Each institution, large or small, should have its representatives at the meeting.

No member can afford to miss this opportunity of improving his knowledge of subjects so vital to successful hospital work. Tell your friends about the St. Paul meeting. Get them to join the association and bring them along with you.

The list of members is increasing daily. Already over 200 have joined. Have you sent in the name of one new member this year? If not, why not do it now? Have him sign an application blank and return it to the Secretary, Kingston, Ont., at once. Tomorrow never comes. Do it now.

We desire to express sincere thanks to those who from time to time have sent in the names of new members. We trust they may continue the good work.

Now is the time to decide that you will attend the St. Paul convention. Write Mr. Bacon and make your reservation on the Association's special train which leaves Chicago August 23. Come along and enjoy a daylight trip along the beautiful valley of the Mississippi River.

Remember the place, remember the date, remember to come.

H. A. Boyce, Secretary,
Kingston, Canada.

THE UNITED STATES NAVAL HOSPITALS IN AMERICAN SAMOA.

A Modern Hospital and Dispensary Have Been Built and Are Administered for Americans and Natives—The Work Is Thoroughly Systematized—Description of the Hospitals.

By EDWARD U. REID,
PASSED ASSISTANT SURGEON, UNITED STATES NAVY.

AMERICAN Samoa consists of five islands located south of the equator and midway between the Hawaian Islands and Australia. The population numbered 7,251 at the census of 1912. Of this number, 6,659 were Samoans, 121 Pacific Islanders from other groups, 292 castes, and 179 whites. About 6,000 live on the island of Tutuila, which has a large land-locked harbor, one of the best in the South Pacific. The Samoans are a well-developed, but rather indolent, people and belong to the Polynesian race. The United States maintains a coaling station and a station ship at Tutuila, with a personnel of about 120 whites and 80 Samoans (band and native guard).

During the year 1911 a new naval dispensary and sick quarters was completed for care of the naval personnel, and a Samoan hospital was begun for the treatment of the native population. These establishments are located about half a mile apart, and are both under the management of the senior medical officer, who is also health officer of American Samoa.

The naval dispensary and sick quarters is located on the shore of the bay at the foot of a knoll, on which is the governor's residence. The central building contains one ward of 16 beds, one private room, three rooms for members of the hospital corps, a dispensary, and two offices. The

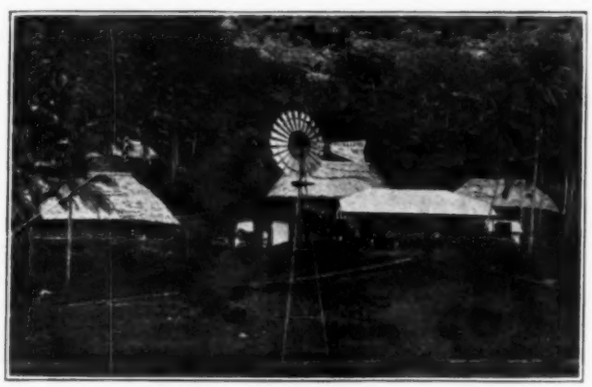

Fig. 1. American Samoa—Naval hospital.

rooms all open by French windows on the wide surrounding veranda. A small annex on the east end contains operating, instrument, and sterilizing rooms; another annex furnishes bathing and toilet facilities; a large annex on the north contains kitchen, pantry, store room, and mess rooms, and, on the west end, dressing room, examining room, dark room for eye, ear, nose, and throat work; a dental office and a large, well-equipped laboratory are provided in another annex. Two small separate buildings provide a store room and a dark room for photographic work.

The buildings are of wood, raised about 3½ feet above the ground on concrete pillars. They are cool and well ventilated, as is necessary in the tropics, the operating annex being the only ex-

Fig. 2. American Samoa—Naval dispensary and sick quarters.

ception. This building is small, and comfort has been sacrificed for better lighting.

This establishment, with occasional use of tents for isolation purposes, furnishes ample facilities for the care of the white population and for research work.

A hospital steward, a hospital apprentice (first-class), and two hospital apprentices (Samoan) formed the small, but efficient, staff during my tour of duty (September, 1911, to May, 1913).

Prior to March 4, 1912, the Samoan sick were treated in the old naval dispensary. On that date the patients and material necessary for their care were moved to the Samoan hospital. This establishment is located on government land, west of the naval station, and consists of a central frame building of three rooms, erected by the island government, and three large and three small Samoan houses, one of each erected by each of the three districts of American Samoa. The central building contains a dressing room (20 by 20 feet), a dispensary and laboratory (10 by 20 feet), and an examining room (15 by 20 feet). A 12-foot veranda extends the length of the front (45 feet), and a kitchen annex and a store room are located in the rear. The Samoan houses are used as wards. The large houses are 28 by 60 feet and the small ones 20 by 32 feet. They are well con-

structed, with thatched roofs and concrete floors. This style of building is cool, well ventilated and easily cleaned.

An operating room 16 feet square was completed in January, 1913, near the western end of the central building. It has four windows (3½ by 7 feet), an amber skylight (6 by 4 feet), and a concrete floor with tile border. It is light, cool, and very well suited to this climate, and was erected at moderate expense. Material and equipment were purchased from the Samoan hospital fund and labor was supplied by the island government.

Fresh water is collected from the corrugated iron roofs of the central building and the operating room in four 400-gallon tanks, and supplied over the dispensary sink and the dressing room and operating room washstands. Salt water for bathing and flushing purposes is pumped by windmill from the bay into a 10,000-gallon tank back of the main buildings, and is connected with three showers, a sanitary closet (for hospital attendants), an automatically flushing closet of four seats (for patients), and a fire hose. Fresh water has more recently been piped from a spring far up on the hillside to the 10,000-gallon tank, so plenty of fresh water is now available during most of the year for all purposes.

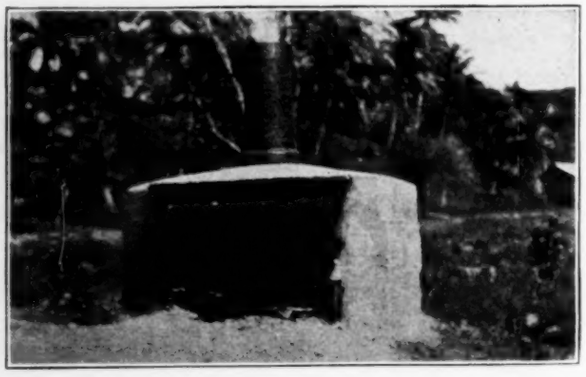

Fig. 3. American Samoa—Improvised incinerator.

Garbage is collected in covered metal cans, and burned in a very efficient little incinerator, constructed from a condemned stove, covered with cement and provided with a section of tile pipe for a flue. A few fire bricks and a piece of old grate set on them in the oven leave ample room for fuel and garbage. A good draft was insured by facing the stove toward the prevailing wind and admitting air under the oven door.

The buildings and roads are lighted by electricity from the station power plant. Road making, ditching, bridge building, grading, and general care of the grounds involved a great amount of labor in addition to that necessary for proper care of the sick. Trees have been planted, and a dozen royal palm fronds were obtained from Honolulu for further improvement of the grounds.

A hospital apprentice (first-class) was in charge at this hospital during most of my stay in Samoa. The sanitary inspector of the islands (a hospital steward) also helped with the work when not away from the station on inspecting tours. Two to three male nurses (Samoan boys apprenticed for training); one female nurse (caste), and a janitor or caretaker were employed during this time. With this small staff a great amount of work was performed.

During the year 1912, 320 cases were admitted, with a daily average of 14.3 patients. Four clinics a week were held, and 2,944 examinations and treatments were recorded for the year. Fifteen deaths occurred in the hospital during the year, several of the patients having been admitted in a dying condition. Among the cases treated were the following: ascariasis, 265; yaws, 154; uncinariasis, 143; tuberculosis, 124. Salvarsan was administered to 107 cases of yaws by the intermuscular method, with most excellent results, and 5,493 surgical dressings were applied during the year.

Case papers, clinical charts, and clinic cards were used. Each clinic case came to the medical officer with a small card bearing the date, name, age, sex, and village, and blank spaces for diagnosis, treatment, and charge, which were filled in by the medical officer. After the treatments were given the cards were filed alphabetically. A journal, a cash book, an account book, a record of supplies and property, and a book for recording operations and laboratory examinations were also maintained. All expenditures were made from the Samoan Hospital Fund on vouchers approved by the governor. This fund was obtained by nominal charges for operations ($5 to $25), treatment in the hospital (25 cents a day), examining and prescribing (10 cents), etc.

During the year 222 operations were performed, 114 being under general anesthesia. The most numerous were for abscesses, usually of filarial origin. Two operations for carcinoma, 29 for elephantiasis, and numerous gynecological operations were included in the list.

Miss Laura R. Logan, for the last three years superintendent of Hope Hospital, Fort Wayne, Ind., has accepted an appointment to become superintendent of nurses in the training school of the new Connecticut General Hospital. Miss Logan has degrees from several schools of high standing in Canada and New York City. She has had a varied experience in hospital work, and was very highly recommended to Superintendent Sanborn, of the Cincinnati institution. The vacancy at Hope Hospital will be filled temporarily by Miss Elizabeth Springer, who was Miss Logan's assistant.

THE BOARD, STAFF, AND SPECIAL DEPARTMENTS OF A SMALL HOSPITAL.[1]

Why Staff Men Are Not on the Board—The Medical Staff—Managing the Finances—System of Records—Conduct of the X-Ray, Hydrotherapeutic, and Pathologic Departments.

By ELIZABETH A. GREENER,
SUPERINTENDENT OF HACKLEY HOSPITAL, MUSKEGON, MICH.

PAPER VIII.

HACKLEY Hospital is controlled and governed by a board of nine trustees, all of whom are laymen. There are no women on the governing board, nor are there any auxiliary committees, our generous endowment enabling us to meet expenses without the outside aid which is generally so essential to the small hospital.

When the hospital was first organized, two of the nine trustees appointed were physicians of high standing in the community. It was found, however, that, while these two members of the staff formed a most valuable addition to the board, having them there was not conducive to harmony with the other members of the staff. The matter resulted in the resignation of the two physicians, who were unwilling to be the cause of any jealousy or friction, and the appointment of two laymen in their places.

Our staff organization is large and includes most of the physicians in good standing in the city. It includes both allopathists and homeopathists. There are eight regular departments—two medical, allopathic, homeopathic, surgical-gynecological, obstetrical-pediatrics, roentgenology, and pathology.

The board of trustees and the staff are closely associated by reason of the fact that the appointments as chief of staff and heads of departments are made by the board. New members of the staff are also appointed by the board, but only on recommendation from the staff for such additions as they consider desirable.

The chief of staff and the eight physicians at the heads of departments constitute what is known as the doctors' committee. Any special communications from the staff are made through this committee, and joint meetings of the board and staff are held when matters of importance to the hospital are to be considered.

The board of trustees holds meetings on the second Monday of each month for the transaction of general or special business, and for the consideration of the monthly report of the hospital and of its various committees.

There are three standing committees appointed from the board—the executive committee, composed of the president of the board, the vice-president, and secretary; the finance committee; and a committee on buildings and grounds.

It has not been found necessary to appoint a special training school committee because the executive committee meets with the superintendent each week for the discussion of general business and to pass on bills and free bed applications. Any matters of importance pertaining to the training school are considered by this committee, and, if necessary, referred to the board for official action.

Our hospital year begins May 1. The annual meeting is held during this month. At this time the reports of all hospital work and transactions for the past year are presented, officers of the board are elected, and at the next regular meeting of the board the chief of staff and heads of departments are appointed. These appointments usually carry over for the second year.

We have no hard-and-fast rules as to visiting hours for attending physicians, or hours for operating. In the small hospital with a large staff this matter is one difficult of regulation. Generally speaking, however, our staff make their hospital visits from 8 to 10:30 each morning and from 4 to 6 each afternoon.

We have but one resident intern. It is, of course, out of the question for him to make rounds with more than a few doctors each day. His practice is to go with the first doctor registering at the hospital, and to see as many others as possible as they call. When physicians are desirous of having his attendance for special reasons, he is notified to that effect from the general office.

Each physician registers immediately on arrival at the hospital, noting hour of arrival, and also notes the hour of departure when leaving. In this way it can be readily ascertained whether he is in the hospital when wanted. Physicians receiving calls of importance or hurry calls are immediately located and notified, a house telephone system from the general office making this a simple matter. Other calls are noted, and the message left in the registry room where the doctor finds it before leaving.

The head nurse or senior always accompanies

[1] This is the eighth and last of the series of papers on the internal administration of a small hospital. Last month, "Purchase and Dispensing of Hospital Supplies and Drugs."

physicians when making hospital rounds. Each doctor writes his own orders in a book provided for that purpose in the nurses' charting room. If a doctor issues verbal orders, he is held responsible for any mistake which may occur in executing them, as the nurses are supposed to have all orders in writing. Should there be any question as to the interpretation of a written order, it is referred to the house surgeon, who decides the matter, or, if in doubt, calls the doctor who left the order.

Physicians of good standing in the community are allowed by courtesy of the staff to send their cases into the hospital and to treat them there. The use of the operating room, however, is only permitted with the understanding that some regular member of the staff must be present to direct or assist at the operation.

Except for emergencies or out-of-town cases, the greater part of our operating room work is done in the morning. No operations, except emergencies, are ever performed at night or on Sundays. Surgeons wishing to operate notify the general office concerning operations, and all necessary arrangements are made there for the use of the operating room, and any other details, such as special nurses, rooms, etc. The surgeon who first notifies the office of operation has the choice of hours—the morning being divided into two periods—from 7:45 to 10 and from 10 to 12.

Each patient, as admitted, is given a number, and all hospital records, charts, cards, etc., are kept under this number in addition to bearing patient's name.

A complete record of all operations performed and of all obstetrical cases is kept in the general office. Each surgeon writes up his operation, or gives the surgical nurse the data for doing so, before leaving the operating room. This is noted on a special operative record sheet. These records are sent from the operating room to the office each day after the operations are finished for the day, and the official record is taken from them, after which they are returned to the ward, to be kept with the charts. Obstetrical cases are reported in the same manner by the head nurse. These records, which are kept with the greatest accuracy, form the basis for monthly and yearly reports showing the work of the hospital. We also keep an alphabetical list of diagnoses, operations, and patients' names, using the card index system for all such records and also for patients' accounts.

Our bookkeeping system is rather a simple one. All bills received are attached to hospital vouchers by the bookkeeper, and are verified by sending to heads of departments, who are responsible for the quality and condition of all goods received in their respective departments; they in turn check these monthly statements over with daily slips or shipping invoices received with goods. If these bills prove correct, they initial them and return them to the bookkeeper, who verifies the extensions. They are then approved and signed by the executive committee and the superintendent.

HACKLEY HOSPITAL

Bill No..... Dated.....

ACCOUNT OF

.....

I certify the within account to be correct.

..... Superintendent.

Authorized and approved by.....Committee.

..... Chairman.

Audited by Finance Committee and ordered paid.

..... Chairman.

Paid.....by Check No.....

CHARGED ACCOUNTS AS BELOW:

1 Ambulance				14 Laboratory			
2 Buildings				15 Lighting			
3 Drugs				16 Nurses' home			
4 Fuel				17 Nurses' text books			
5 Furniture and furnishings				18 Nurses' uniforms			
6 Grounds				19 Office expense			
7 Ice				20 Repairs, building			
8 Incidentals				21 Repairs, sundry			
9 Instruments and appliances				22 Salaries and pay roll			
10 Kitchen equipment				23 Sundries			
11 Kitchen supplies				24 Surgical supplies			
12 Laundry equipment				25 Table furnishings			
13 Laundry supplies				26			
H Hospital supplies				27 Bedding, linen, etc.			

Voucher No.....for $.....

Fig. 1. Voucher form.

The vouchers are then recorded in the voucher book and presented to the finance committee for approval, after which checks are drawn for same. All bills are paid by check, except small items of less than $1, which are charged to a petty cash account and put in voucher form when $20 have been spent. All vouchers are filed away numerically after checks have been sent.

Journal entries are made up from the voucher book and transferred to the ledger under the headings shown on the voucher form. The regular trial balance sheet is made out each month.

SPECIAL DEPARTMENTS.

We have several departments in connection with the hospital that add very considerably to the value of its service, and are of great benefit both to patients and staff. One of these is a well-equipped pathological laboratory for clinical or diagnostic work, either for hospital patients or those outside of the hospital.

An experienced pathologist is employed for this work, who is on regular salary and who spends several hours daily in laboratory work. Simple urinalysis and other routine work is done by the intern.

Another most valuable department is that of radiography. Our equipment is most complete, including a coil, radiographic table, stereoscope, static machine, and all necessary facilities for good diagnostic work. A member of the staff who specializes on this line is engaged by the board for this work, which is done on a commission basis.

Hospital patients remaining for more than a week are given a half rate on all laboratory work done, except urinalysis and blood counts, which are always done free. Vaccines are in all cases charged for at full rate. The fee table is as follows:

Urinalysis	$1.00 to $3.00
Diazo test	.50
Quantitative sugar test alone	1.00
Staining for bacteria of urine	1.00
Sputum	1.00 to 3.00
Throat culture with diagnosis	1.00
Throat smear for diagnosis	1.00
Gastric contents analysis	1.50 to 3.00
Blood examinations—	
Simple count with Hgl	1.50
Simple count with differential count of white cells	3.00
Stain for malarial parasite	1.00
Examination for spirochetes	3.00
Widal test for typhoid	1.50
Blood pressure	.75
Milk analysis	1.50 to 3.00
Pus examinations	1.00 to 2.00
Feces	1.50 to 3.00
Tissue curettings	3.00
Tissue—larger pieces	5.00 to 25.00
Vaccines—stock 25 cc	5.00
stock 1 cc	1.00
autogenous	10.00
Wassermann reaction	10.00 to 15.00
Visits away from the hospital by the pathologist, extra	1.50 to 3.00
Each culture and swab	.10

A complete hydrotherapeutic department is located in the basement of our west pavilion. This department contains an electric bath cabinet, hot air and steam rooms for Russian or Turkish baths, small pool, shower, shampoo and massage tables, rest room, dressing rooms, etc. A graduate nurse is employed who has had special training in this particular line of work. She takes entire charge of this department, gives all treatments to female patients, and has oversight of those given to male patients, which are given, however, by a male attendant. She also conducts the course of instruction in massage and hydrotherapy for our pupil nurses, and, as there is sel-

ANESTHESIA AND OPERATION RECORD.

No. .....

Name ..... Date ..... Surgeon .....

Condition of lungs and heart (3 lines) .....

Before		Urine Analysis		After
S. G.				S. G.
Albumen				Albumen
Sugar				Sugar
Casts				Casts
Quantity				Quantity

Leucocytosis ..... Pulse, before ..... during ..... after .....

Resp., before ..... during ..... after .....

Temp., before ..... after .....

Anesthetic commenced ..... Operation commenced .....

Anesthetic stopped ..... Operation ended .....

Amount and kind of anesthetic used .....

Medication during anesthesia (3 lines) .....

Medication after anesthesia (3 lines) .....

Condition during operation (3 lines) .....

Condition after operation (2 lines) .....

Description of operation (8 lines) .....

Anesthetist.

Fig. 2. Anesthesia and operation record.

dom enough work in this department to occupy a nurse's whole time, is given other hospital duties, regulated according to the amount of time required by her regular work. We follow the same plan in the matter of charges in this department as in the laboratory, allowing all patients who stay in the hospital for more than one week a half rate.

A very important feature of the service rendered by Hackley Hospital is represented by our visiting nurse, who devotes her entire time to work outside the hospital. In the early days of the hospital the board recognized the value of having a nurse in the city who could, if necessary, follow convalescent patients to their homes, or who could give intelligent care to cases not ill enough, or perhaps unable for various reasons, to leave their homes to come into the hospital. This service has been of untold value in the care of tuberculosis cases, which must be excluded from our general hospital, and for which the city has as yet made no provision. In order to secure cooperation and assistance in connection with this work, the Visiting Nurse Association was organized, composed of representative women from each church, club, school, etc. The women of the association practically direct this work and furnish the nurse with all necessary supplies for the sick by means of a "neighborhood basket," which is kept in circulation throughout the year by the different members in order to secure delicacies, clothing, old linen, infants' wear, etc.

The compensation for the visiting nurse service depends entirely on the ability of the patient or his family to pay. Her services are given free of all charge when needed, while a small fee may be paid by those not desiring charity. The nurse is a regular employee of Hackley Hospital, appointed and paid by the board. All money collected from patients is turned over toward the support of this work. Having this nurse enables us to do any required social service work or investigating required in connection with hospital cases. It is hoped that, as the work and service develop, the whole time of this nurse will be required for hospital social service work, while the Visiting Nurse Association, which is at present really an auxiliary committee, expects to organize shortly on an independent basis and maintain its own nurse.

Following closely on the decision of Judge Bregy, of the court of quarter sessions of Philadelphia county, in which he declared that animal experimentation was cruelty, the Philadelphia County Medical Society passed a set of resolutions in which nearly 1,700 members placed themselves on record as having full confidence in the rectitude and humanitarianism of the distinguished scientists who were being prosecuted for alleged cruelty to animals. The resolutions were unanimously adopted.

WEIR MITCHELL'S CIVIL WAR STORY.

Last Public Address of Famous Physician-Painter-Novelist-Raconteur Was Plea for Greater Recognition of Army Surgeon.

A very interesting address of Dr. Weir Mitchell, of Philadelphia, before the Physicians' Club of Chicago, is reproduced in the *Journal A. M. A.*, May 9, 1914. He mentions the old medical department of the army, consisting of 30 surgeons and 83 assistants, a considerable proportion of which went with the South during the Civil War, though a number of southern surgeons stood true to the flag. The surgeon-general had to be retired early on account of age, and the vacancy was filled by the appointment of Dr. W. A. Hammond, whose able administration in view of the tremendous problems involved, friendship to scientific work, etc., are mentioned. Dr. Hammond used a great opportunity as few could have done, but he was impulsive and overconfident, and when he at last came in contact with the autocratic secretary of war, Mr. Stanton, he was court-martialed, and, as Mitchell says, unjustly removed from the army after a service of unequaled value. Mitchell describes the building and organization of the great military hospitals, which speedily became admirable and anticipated many of the ideas which are now being advanced. There were, of course, things seen in the surgical wards which it is to be hoped will never be seen again, but great advances were made. To meet the needs of the field and the hospital service, Hammond created the rank of brigade surgeon; another creation of his was that of the medical cadets, among whom some of our best-known modern surgeons started in their career. Some of the surgeons lost their lives under fire, and there was, under the circumstances, an appalling mortality and much bad surgery. Mitchell's memory of hospital nurses during the war is mixed. The orderlies soon became rapidly efficient for the less exacting duties of that time. Some of the women nurses were not above criticism, but there are some of whom he has since thought with grateful remembrance. Some of his interesting personal experiences are given, and he mentions his study of nerve lesions, which were among his earlier contributions to medicine. The military surgeons of the Civil War have not received, he thinks, due recognition. In the battle of Gettysburg and other battles every place where a general fell is marked, but we should remember that the marking of sites of corps hospitals with bronze shields and the names of the surgeons in charge, as he suggested to the Gettysburg commission, is the first national recognition of the surgeons of the Civil War.

A home for the aged and orphans of the Order of Hermann Sons is to be erected near Comfort, Tex. The building is to be of reinforced concrete, thoroughly fireproof, comprising two stories and basement. It will contain fifty rooms, ten complete bath rooms, two sleeping dormitories to accommodate thirty children and connected with bath, wash rooms, and showers. Living quarters and a large office are provided for the custodian. A large rotunda or lounging lobby is located immediately in front of the entrance on the first floor. Connecting with this are three corridors, two dining rooms, a guest room, a ladies' parlor, a gentlemen's parlor, and a smoking room. Two hospital wards with connecting baths and all medical requirements for the sick room are located on the second floor. The basement contains the kitchen, storage rooms, laundry, and heating plant. The architect's drawing of the structure indicates that it will present a handsome appearance and some rather unique features.

THE ITEMS IN HOSPITAL EFFICIENCY.[1]

The Hospital Diet—Patients Are Fed Too Much and Badly—There Are No Trained Dietitians and No System of Scientific Feeding—A Suggested Feeding Chart.

By JOHN ALLAN HORNSBY.

THE hospital patient in the United States is fed too much and fed badly. This statement is not true universally, but it is true in a vast majority of cases. We hear on every side inquiries and arguments about the feeding of patients in hospitals, but we almost never hear about the scientific feeding of the sick.

There are literally hundreds of hospitals in the United States that have a reputation for feeding their patients well—meaning that they give them large quantities of good food, well cooked and well served; but there are not three hospitals in the United States in which an exacting physician can count on having his patient fed an accurate, scientific diet over any considerable period of time, and there are not three hospitals in the United States which, in routine practice, are able to tell the physician what they are doing for his patient in the way of scientific feeding from day to day.

There are not three competent hospital dietitians in this country—meaning by this that there are not three women holding the position of "dietitian" who are capable of taking orders for a scientific diet in consonance with certain purposes of metabolism, and then going to the kitchen and feeding that patient in the way prescribed. And yet it has come to pass that selected foods have taken the place of drugs in many diseases and under many conditions, and we are learning more and more about foods, their availability, their chemistry, and their utilization in the human system under the influence of the processes of digestion. The so-called hospital "diet lists" are absolutely worthless for giving the physician an accurate accounting of what is being done for his patient in the way of food.

A great many people are under the impression that a "diabetic" diet is composed of food material absolutely without sugar, and these same people are under the impression that a diet for a patient suffering from nephritis, in which albumin is one of the chief symptoms, has absolutely no proteid constituents. Of course, this is entirely untrue. Foods do not come in such a clearly demarked way. A diabetic food is one relatively low in sugar, and food for a patient suffering from Bright's disease is one relatively low in proteid chemical constituents.

A good many doctors are satisfied to have their patients fed on the so-called "special diets," measured in calories.

Let us take a hypothetical case. A patient is suffering from Bright's disease; the doctor orders a "strict nonnitrogenous diet." When the patient comes into the hospital, a quantitative examination of the urine is made, giving the percentage of albumin; the blood is carefully examined, the blood pressure is taken, the hemoglobin determined, and the patient is weighed. If a really serious attempt is being made to feed the doctor's patient properly, these examinations are repeated daily and a strict diet is maintained. At the end of five days, let us say, the doctor finds that the albumin has gone down in quantity, but he finds that his patient has lost weight—now what is he going to do? Perhaps the caloric measurement of the food has been taken, and he finds that his patient has been getting about two thousand calories per day. He is now facing the problem of further orders for food. What is he going to do about it? He knows, in a general way, that his patient has been getting food low in proteid, but he doesn't know how low, and he doesn't know how much fat or how much carbohydrate, or how much fluids the patient has been getting. But suppose he knew exactly how much proteid and how much carbohydrate, and how much fat his patient had been getting during the past five days. Would it not be a comparatively easy thing for him to order a slight increase in the proteid and perhaps a large increase in the fats, depending on these changes to improve the patient's weight without increasing the albumin in the urine?

No system exists, as a routine practice in any hospital in this country at the present time, by which a physician can have access to this information. Is it not a commentary on the accuracy and scientific value of the hospital dietary when we must confess that we are unable to tell the doctor in any scientific terms what his patient is getting in the way of food? And yet this is the actual condition that exists, and it is not necessary that it should exist, because all the information necessary is at hand in quite useful form; indeed, in such useful form that a pupil nurse, with a little training, can apply the system.

The United States Department of Agriculture has published a bulletin containing the so-called

[1] This is the fourth of a series of eight papers discussing the various factors in hospital efficiency. Last month, "Physical Therapy."

Special Diet Record

Admission No._____

Name _____ Physician _____

Location _____ Interne _____

Date of Admission _____ Special or Floor Nurse _____

Diagnosis _____ Special Diet Nurse _____

Special Diet for 191

BREAKFAST

ARTICLE	How Served	Quantity	Quantity Returned	Quantity Consumed	Proteid	Carbo-Hydrate	Fats	Salts	Fluids	Calories	Remarks
TOTALS											

Quantitative diet chart. Full size, 8½ inches wide by 13½ inches long, with divisions for dinner, supper, and between-meal feedings.

Atwater tables of chemical constituents of food material. These tables will lend themselves to the practice of an accurate feeding system for hospitals, and by referring to them the diet nurse can tell at a glance just how much of each chemical constituent any given article of food contains.

Now, let us feed a patient a breakfast—not with reference to a strictly nonnitrogenous dietary, but just a breakfast. The menu is as follows: cantaloupe, 6 ounces; two soft-boiled eggs (giving actual weight); broiled bacon, 1 ounce; tea, ⅛ pound, diluted with 1 ounce of 24-percent cream and sweetened with 4 grams of sugar.

This is the food that actually went to the patient, and it went there without anyone, excepting the dietitian, touching it; so nothing was added or subtracted. When the dishes were brought back to the diet kitchen the cantaloupe rind was weighed and the weight deducted from the total weight of the cantaloupe supplied. Only a part of the boiled eggs was eaten; what was left was weighed back and deducted from the total amount sent up. The cream for the tea was not used and was returned with the dishes. A note sent down with the returned dishes, by the nurse in the case, stated that the patient insisted upon another cube of sugar, which was given to him.

Now, let us see how we are going to determine just what the patient had. By turning to the Atwater tables, we find that cantaloupe is made up of so many parts of water, so much percentage of sugar, so much proteid, and so on. We find by reference to the same tables that the quantity of bacon actually consumed contained so many grams of proteid, so many of carbohydrate, so many of fat, and so much fluid. In the Atwater tables also we find the caloric values per pound of these various articles of food; so that by the simplest calculation we can determine for the doctor exactly how many calories the patient had for breakfast, and the division into chemical constituents of food. See the illustration.

The same process can be carried out for dinner, for supper, and for any between-meal feedings the patient may have had. This chart can be carried out from day to day, and so at the end of five days, when the physician finds that his patient has lost three pounds in weight, and has also lost say 3 percent of albumin, he can go back to his daily feeding charts, and to a nicety will be able to tell just how much proteid the patient will stand and how much carbohydrates, fats, and so on. This system, if carried out in a routine way, is not at all difficult, and a pupil nurse with common sense, acting under the direction of a competent dietitian, can do the work, make the calculations, weigh out and weigh back the food materials.

Of course, there are some very slight inaccuracies in this system to account for, as, for instance, the bacon will be weighed raw and when it is cooked it will have lost a certain amount of fat. It would not always be easy to tell accurately whether the cream supplied was 18 percent or 24 percent, but relative values would be there. The amount of fat lost in the bacon in the first five

days would also be lost in the second five days; the cream, if it were a 24-percent cream in the first five days' feeding, would be likely to be a 24-percent cream thereafter. If this system of hospital feeding of the sick can be carried out, it sums up the whole problem of the special diet.

It is true, there are very few physicians who would appreciate a diet of this character at first, and very few who would attach much importance to the accuracy of this method of feeding, but there are a sufficient number of men who will appreciate it. The hospitals have been following blindly a long way behind the medical profession in scientific service. Is it not about time that the hospitals should ask from medical staffs actual employment of scientific methods if they are to require scientific service? If this method is installed in a hospital, and if only one man uses it, it will not be long before others will find themselves compelled to use it also.

As for the rest of the hospital dietary, very little need be said. There is very little more of it. Of course, members of the medical profession who have private patients in the hospital are going to insist that the hospital shall please these patients in the matter of food, and it goes without saying that food should be properly purchased and in good condition, and that it should be well cooked and well served.

It is almost uniformly the case that physicians are disposed to blame the hospital if things are not right with the food of patients, and too often is this true, even when the hospital has been living rigidly up to the orders of the physician in the matter of quantity and quality. We all know that rich, expensive foods are not good for patients, as a rule, and that simple, well-cooked foods are better than made-up dishes. Every physician knows that his patient will be better off with a small slice of tender roast beef served free from insoluble greases, than a greasy, garnished stuffed bird, but there is almost no physician who has the courage to deprive a private patient of the richer food, and he compels the hospital to supply it.

Many physicians also have the habit of allowing patients to choose their own articles of diet, and of ordering for them the most difficult things to purchase and prepare. Patients are notoriously capricious of appetite. The hospital may have spinach and asparagus and new potatoes today, but, having seen these on the diet list, the patient decides she does not want them, but wants French peas, string beans, and sliced tomatoes out of season instead. It would be an extremely easy thing for the physician in these cases to say to his patient, for instance, "Now, I am going to have some little surprises for your appetite, and I have given orders that you are not to know what you are going to have for meals; I do this so that you will relish the things that are brought to you." With an explanation of this sort, the labor for the hospital of preparing individual and special articles would be reduced to a minimum and a large part of the present expense of feeding private patients would be eliminated.

EXCHANGE OF MEDICAL STAFF MEN.

Proposed in the Interest of Progress and to Avoid Routine and "Institutionalism," Staff Members Exchange Services.

Recent years have beheld a vast development in the idea of travel study in medicine and surgery. Clinical congresses and travel tours have demonstrated the advantage of the exchange of ideas and the dissemination of new methods. This development has not been confined to the medical sciences. It has been conspicuous in other branches, particularly in chemistry, mathematics, law, and the social sciences. The frequent calls made by the universities of Germany and Austria for professors in other institutions and the consequently frequent transformations of the faculties in these universities exemplify the desire to infuse new blood into the bodies of learned institutions. Science rebels against routine. Its healthy existence demands constant renewal. The German idea has found a new development in the creation of exchange professorships, so that there now exists a series of exchange professorships between America on the one hand and Germany and France on the other. Would it not be feasible to apply this idea in hospital administration? One of the greatest drawbacks of the modern hospital system is the blighting effect of routine and institutionalism. However great may be the desire on the part of members of the hospital attending staffs to escape from the evils of working in a rut, however eager they may be by their attendance at national and international congresses to acquire new ideas and methods, however assiduous they may be in their visits to the clinics of their colleagues both in their own country and abroad, nevertheless they cannot altogether escape the deadening influence of routine. The idea of an exchange system could be easily applied in any of the larger cities. It should occasion no revolution in hospital efficiency if two institutions agreed to exchange, for instance, one of their attending surgeons for a period of from three to six months or even longer. This does not imply that the exchange surgeons would at once or at any time try to upset the system that had been established in the institution to which they were assigned. It does not imply that they would seek to make any startling change in operating room methods and technic. One would, on the other hand, conceive of the visiting surgeons both imbibing and imparting new ideas in a manner that is not obtrusive, influencing both the assistants and the other individuals connected with the hospital by the force of their example and the power of their personality. Whether the surgeons would care to make the exchange is another question.—*New York Medical Record.*

After having been closed for several years, the Strasburg (Va.) Hospital has been reopened. Dr. H. M. Duncan is in charge.

OPERATING ROOM TECHNIC IN THE ROYAL VICTORIA HOSPITAL.

Preparation of Room, Table, Patient, and Material—Care, Sterilization, and Storage of Gloves and Other Rubber, Dressings, Bougies, Catgut—Formulas for Solutions.

By MISS R. K. FELTER, Nurse in Charge, Royal Victoria Hospital, Montreal.

THERE should be no confusion in the operating room, and each person should become thoroughly acquainted not only with his or her duties, but also those of others employed in the operating room. There should be no unnecessary talking, and each movement should be executed quickly and noiselessly, and without coming in contact with other persons. The operating furniture consists of an operating table, a sterile table, two or three footstools, two chairs, two basin stands, one basin for soiled gauze, and a pail for waste solutions. Soiled instruments, basins, linen, and table to be removed and floor mopped after each operation.

Preparation of Operating Table.—On the table is placed a rubber-covered mattress, Trendelenburg crutch, small rubber-covered pillow, and the lithotomy posts; a number of sand pillows should be near at hand.

Preparation of Basins.—A jar containing nail brushes in a solution of bichloride of mercury 1-5,000 or left dry, a dish of green soap, a nail file, a bottle of glycerin and rose water should be on each basin stand. Brushes used to be boiled and returned to jars after each operation. Towels to be hung over glass at back of basins.

The Scrub-up Table.—This is left ready, with a bottle each of ether, double strength tincture of iodin, benzin and Columbian spirits; also a razor, dressing rubbers, some gray cotton bandages, sterile sponges, swabs, and forceps.

METHODS FOR THE STERILIZATION OF THE PATIENT'S SKIN.

First Method.—The skin is first thoroughly rubbed for two or three minutes with gauze swabs wrung out of the benzin solution, care being taken not to allow any excess of benzin to run down and remain upon dependent parts where they are in contact with the rubber sheeting under the patient (otherwise a blister may be caused); this is followed by rubbing with gauze soaked in alcohol (Columbian spirits is sufficient). The alcohol removes the benzin and at the same time assists in sterilization.

Although there is a certain percentage of iodin in the benzin solution, it is usually thought wise to add to the above a third step, consisting in the painting of the skin with tincture of iodin as by the Grossich method. The composition of the benzin solution is as follows:

Benzin	75 parts
Paraffinium liquidum	24 parts
Tincture of iodin	1 part

The solution should be well shaken before being applied.

Second Method—Grossich's Method.—This consists in the simple application of tincture of iodin over the field of operation. It is usual to make a second application after the first has become dry. The skin is not previously prepared in any way, and in particular the use of water shortly beforehand is unwise, as this impedes the full action of iodin; thus, if shaving is necessary, it is well to have it done some time before the operation, or else to shave dry.

The double strength of tincture of iodin is the one most frequently used. A formula is as follows:

Iodin, 5 percent	1 part
Potassium iodin	1 part
Alcohol, 94 percent	ad 20 parts

Disinfection of the Operating Room.—The walls of the operating room should be washed down once a month with soap and water and hosed down once a week; the furniture washed once a day or oftener if necessary; the operating table, dressing rubbers, and sand pillows with sanatine or soap after each operation; with creolin 1-160 or bichlorid 1-1,000 after every septic case. The department should be dusted daily and be always ready for use. Dusting or cleaning should not be done just before an operation, and the air of the operating room should always be moist. All windows must be kept closed and drafts avoided; in summer those windows which are to be kept open in rooms adjoining the operating room should be provided with screens. The temperature of the room should be between 70 and 80 degrees F. After cases of streptococcic infection the operating room is disinfected by the formalin process.

Enamel Ware.—Hand basins, pitchers, kidney basin, etc., are scrubbed with soap and water or sapolio, and boiled in 1 percent solution of soda carbonate for thirty minutes.

Brass and Nickel Work.—Is cleaned weekly

with metal polish and a soft cloth, and dusted daily.

Glass Flasks, Basins, etc.—Are washed once a week with liquid soap and water, followed by oxalic acid crystals, then by liquid ammonia and rinsed with distilled water.

Preparation of the Hands.—Scrub hands and forearms with brush, hot water, and spirits of green soap for five minutes, paying particular attention to the nails.

Swab hands and forearms with 70-percent alcohol for two minutes. If running water be not used, the water must be changed at least twice. Rings must be previously removed and nails carefully pared. This method may be used in preparing the field of operation with the addition of swabbing the skin with ether before applying the alcohol.

Operating Room Costumes.—Surgeons and house surgeons wear white linen blouses and trousers, nurses on duty in operating room wear white linen or cotton dresses, putting on a fresh one each day or oftener if necessary; also caps to cover the hair, changing them every second day. The gowns are long-sleeved, belted in, and fastened down the back. Surgeons, assistants, and nurse in charge wear sterile gown, rubber gloves, and mask for each operation. Gloves and gowns are changed after each operation.

Visiting Doctors and Students.—Are provided with freshly laundered cotton gowns, made long-sleeved and loose fitting, which will be found hanging in students' passage; these are to be put on before entering theater. Each nurse must wear rubber heels. The operating room orderlies wear white cotton blouse and trousers, and also coat with red cross on sleeve to wear when leaving the department.

Gowns.—Are of three varieties. For operators and assistants, long- and short-sleeved, as preferred; they are laundered in the usual manner, after which each gown is placed in a heavy factory cotton bag pinned up loosely and sterilized. Patients' gowns are made long-sleeved of heavy canton flannel. Patients' pneumonia jackets are made of double canton flannel, with the fleecy side out.

Rubber Aprons and Dressing Rubbers.—Are made of thin double-faced rubber sheeting; they are cleaned after each time of using by scrubbing with soap and water, and wiping off with formalin 1-1,000.

Rubber Gloves.—Gloves after use are washed in cold running water on both sides, then boiled from five to fifteen minutes in a 1-percent solution of soda carbonate, dried, and powdered with talcum on both sides, patched with rubber (which also has been boiled) by rubbing the surface of both gloves and patch with benzin, and then with fine sandpaper; then apply rubber cement to glove and allowing five to ten minutes to dry, press the patch down over the cement, using a good deal of pressure; gloves are then mated, placed in heavy factory cotton covers and sterilized by steam for ten minutes at 10 pounds pressure. The hands are thoroughly disinfected, dried on sterile towel, and powdered with sterile talcum, and the gloves put on dry.

Towels.—Should be made of heavy linen toweling 36 by 20 inches, and sterilized in packages of four with one sheet.

Blankets for Use in Operating Room.—Should be the ordinary single blanket cut in half. This size is most convenient for wrapping round the legs of the patients or placing over the chest. They are laundered after each time of using.

Head Nurse in Operating Room.—Is responsible for the care of the whole department and the furniture and apparatus pertaining thereto. She is responsible for the preparation of all instruments, dressings, ligatures, sutures, and appliances necessary for each operation. She or her assistant stands at the instrument table during operations, and passes such instruments to the surgeon as he may require. She should endeavor in every way to anticipate his wants; she watches closely the nurses who assist her in the operating room and who are under her directions, and sees that they properly perform their duties. She must not leave her post at the operating table except at the request of the operating surgeon. She delivers such messages as are reported to her to the person for whom such message is intended. She sees that all the instruments and appliances are kept locked when not in use.

Instruments.—Should be kept in their proper places in instrument cases when not in use. Knives should be kept in racks to prevent dulling. Needles should be kept in needle trays. Instruments made in part of soft rubber should be kept in separate drawers. Needles and knives are boiled separately from other instruments—the needles in a glass tray and knives in a rack with edges up to prevent dulling. They are boiled from one to three minutes in a solution of 1-percent carbonate of soda, 3 drams to one quart of water; there should always be sufficient solution in the boiler to cover the instruments. Directly after use instruments should be washed piece by piece in cold running water until all blood stains are removed, using a stiff nail brush to facilitate the cleansing, particular attention being paid to locks and crevices; instruments are then boiled from five to twenty minutes in the soda solution; following this they are scrubbed with sapolio and liquid ammonia until bright, rinsed in very hot

water and dried thoroughly with soft towels, and put in their proper places. Each of the cutting-edge instruments should be looked over, and sent to be sharpened if necessary; there should be a sufficient number of knives to allow a fresh one for each operation. Instruments out of repair should be sent to the office at once.

Nail Brushes.—Should be of the common hand brush variety, of good quality, and not so stiff as to abrade the skin.

Soaps.—Green soap, therial soap, glycerin and alcohol soap, and castile soap are used in this department.

Solutions.—

Lysol, minims xx to oz. xx. equals 1 in 500.
Creolin, dram j to oz. xx. equals 1 in 160.
Normal saline, dram j to
oz. xx.....equals $\frac{9}{10}$ percent.
Formalin, minims xij to
oz. xx.....equals 1 in 2,000 formaldehyd.
Hydrochloric perchlorate,
solution 1 in 20, xL to
oz. xx.....equals 1 in 5,000.
Hydrochloric perchlorate,
tablet grains 7½, tablets j to oz. xvj.....equals 1 in 1,000.
Potassium permanganate,
oz. j to oz. xx.....equals saturated solution.
Oxalic acid, oz. ijss to oz.
xx .....equals saturated solution.
Boric acid, oz. j to oz. xxv. equals saturated solution.
Carbonic acid, oz. j to oz.
xx .....equals 5 percent or 1 in 20.
Soda carbonate, dram jss
to oz. xx.....equals 1 percent.

Normal Saline.—The flasks are first washed with soap and water, then with oxalic acid crystals and water, shaken thoroughly, then liquid ammonia, then rinsed well with distilled water. Dissolve one dram of sifted salt to each pint of distilled water, filter into flasks after first washing glass funnel and wetting the filter paper, plug with nonabsorbent cotton, sterilize by steam for one hour at 15 pounds pressure, allow pressure to go down very slowly to avoid jarring the flasks, cool slowly and put away ready to be heated to 110 degrees and placed in the incubator.

Iodoform Emulsion, 5 Percent.—To one part of iodoform powder add 20 parts of glycerin. Place in a glass flask, plug with nonabsorbent cotton and sterilize for one-half hour at 10 pounds pressure of steam and allow to cool slowly.

Iodoform Gauze, 20 Percent.—Iodoform powder, 10 drams; carbolic acid, 1 in 40, 6 ounces, and castile soap to make a good lather. Take 3 yards of absorbent gauze, draw threads in the desired widths crosswise throughout the length of the gauze; then take up all of the solution, shaking and slapping until well distributed. Cut where threads have been drawn, fold edges in; roll and place in test tubes. Plug with nonabsorbent cotton and sterilize for one-half hour at 10 pounds pressure of steam.

Rubber Tubing.—Procure specially prepared tubing without sulphur coating; scrub with stiff brush and green soap, then boil for fifteen minutes in 1-percent solution of sodium carbonate; Place in sterile normal saline solution, from which solution tubing is used.

Silkworm Gut.—Boil for ten minutes in distilled water, allowing it to remain in the hot water during operations to keep it soft and pliable.

Horse Hair.—Scrub with hot water and green soap, rinse thoroughly in distilled water, then in 50 percent alcohol, then boil same as silkworm gut before using.

Silver Wire.—All pieces of silver wire should be saved, as manufacturers allow for silver wire returned. This is prepared by boiling with the instruments.

Plain Gauze.—Draw threads, moisten in distilled water or leave dry; cut, fold, roll, and place in tubes and sterilize the same as iodoform; all gauze in this department is cut 2, 6, or 12 inches, the edges of each being turned in.

Vioform Gauze.—Draw threads and saturate in the following solution: vioform, 100 parts; alcohol, 650 parts; glycerin, 250 parts. Cut, fold, roll, and place in tubes, and sterilize the same as iodoform gauze.

Sterilizing.—All dressings, sponges, gowns, towels, aprons, surgeons' silk, etc., are sterilized for one hour at 15 pounds pressure of steam, after which time the pressure is allowed to go down, the water drained off and the heat of the sterilizer allowed to dry contents.

Dressing Gauze.—The usual double fold of absorbent gauze is cut 24 inches long, folded to 6 inches, with edges turned in. One dressing consists of three such pieces and three pieces of absorbent cotton cut to the same size; place in heavy cotton and sterilize.

Abdominal Towels.—Are made of absorbent gauze 18 inches square, placing two in each cover, and sterilized.

String Pads.—Are made in two sizes. The larger is cut 24 inches and folded to 6 inches, with edges in; to the end of each is attached a string or tape 4 inches long. The smaller are cut 12 inches and folded to 3, with edges turned in; to the end of each is tied or attached a string or tape 4 inches long. These pads are put up in heavy covers containing six pads, and when opened for operation are counted again in presence of witness and also after operation.

Gauze Rollers.—The rollers are made by folding the usual absorbent gauze to 4 inches, cut 3

yards long and rolled; done up in packages of one each and sterilized.

Bandages.—White and gray cotton are cut 6 yards long by 1, 2, 3, 4, 5, 6, and 7 inches wide.

Flannel Bandages.—White and gray are cut 5 yards long by 3 and 4 inches wide.

Plaster Bandages.—A variety of plain crinoline impregnated with thin glue, leaving plenty of space for plaster; White's dental plaster is rubbed evenly into the crinoline until the meshes are well filled. The bandages are rolled loosely, to permit the water to penetrate quickly; they are cut from 2 to 8 inches wide and 4 yards long; they are wrapped in paper and kept in a dry place.

Rubber Goods.—The stock supply of rubber goods—such as rubber tubing, catheters, stomach tubes, perineal tubes, Esmarch constrictors, and Martin's elastic bandages—should be kept in a drawer by themselves and liberally sprinkled with powder sulphur. Treated in this way, rubber can be kept in good condition for years. Rubber tubing should not be kinked, nor should rubber sheeting be creased. Rubber drainage tubes in desirable lengths are cut from the stock supply, scrubbed with soap and water, boiled for ten minutes in 1-percent solution of soda carbonate and placed in covered glass jars containing 1-10,000 solution of bichlorid of mercury or normal saline. Boil tubing and change solution once a week.

Bougies, etc.—Filliform bougies, silk woven catheters, and esophageal bougies *should never be boiled;* they are washed with soap and cool water, then with cold bichlorid of mercury 1-5,000, carbolic acid 1-80, or formalin 1-500, and then *cold* distilled water, from which solution they are used; after use they are washed with soap and *cool* water, rinsed and water forced through catheters, carefully dried, and oiled before putting away. Hot or even warm solutions soften these too much.

Tourniquets and Rubber Bandages.—Are washed with soap and water, boiled, dried, powdered, and rolled up ready for use.

Surgeons' Silk.—Wind silk on glass spools and place in test tubes; plug tightly with nonabsorbent cotton, sterilized by steam for one hour at 15 pounds pressure; open valve in top of sterilizer, and leave for three-quarters of an hour to dry with door closed. Silk may also be boiled for five to twenty minutes in normal saline or bichlorid 1-1,000, and preserved in sublimated absolute alcohol 1-5,000, and also by waxing. Linen thread is prepared in the same way as silk.

Thermo and Electric Cautery.—This should be tested each operating day, and reported to head nurse if out of order. Its principal use in the operating room will be for the destruction of mucous membrane in appendectomy, in operations on the liver and bile passages, and in hemorrhoid operations. From three to five minutes should be allowed to get the cautery in running order. *The heated cautery should be kept at a distance from the anesthetic,* as ether is inflammable.

Splints.—Are kept in a room at the top of the students' stairs. All varieties of splints and splint material should be in stock. There should be a small table and set of tools, so that special splints can be made.

The Anesthesia Room.—The furniture consists of the anesthetic table, a glass case containing a reserve supply, masks, mouth gags, tongue forceps, etc., the gas and oxygen apparatus, the stretcher, towels, patient's cap and blankets. The stretcher is provided with a rubber-covered mattress and straps for holding patient. On anesthetic table place chloroform, with dropper and mask, vaselin, tongue forceps, mouth gag, swab forceps, hypodermic syringe charged with strychnin 1-30 grain in brandy, and aseptic needle to fit, kidney basin, two medicine glasses, and other restoratives, consisting of morphia ¼ grain, digitalin 1-1,000 grain, and ergotol. The mouth gag, tongue forceps, and swab are boiled after each case. The eyes of the patient should be covered with folded towel. In spite of this precaution, should some of the anesthetic enter the eyes, they should be irrigated with boracic solution, after which drop a little oil of ricini into each eye to relieve irritation. The patient's head should be turned on one side, and should be lower than the body to facilitate the escape of secretions from the angle of the mouth.

ARTICLES FOR OPERATION IN PRIVATE HOUSE.

1. Twelve old newspapers for the floor.
2. One large sheet for the floor.
3. Tacks and hammer for the floor.
4. One kitchen table.
5. One large sheet, one mackintosh, one blanket for table pad.
6. One small blanket, one mackintosh, string and adhesive plaster for Kelly pad.
7. Two kitchen chairs, two sheets and two pillow cases for covering them, and two table leaves for instrument table.
8. One wash stand, and sheet and towel for covering it.
9. One small table for anesthetic.
10. One bath tub for disinfecting utensils.
11. Two stools for hand basins.
12. One wash boiler for sterilizing instruments and dressings.
13. Two hooks for holding table.
14. Utensils for bath tub: two wash bowls, three large water jugs, one small water jug, two small bowls, four small plates or saucers, one kitchen fork.
15. Articles for wash boiler: four sheets, ten towels, dressings, sponges, gloves, nail brushes, and instruments.
16. Articles for doctor's stand: one basin, three brushes, one nail file, and liquid soap.
17. Articles for scrub-up table: one razor, swabs,

liquid soap, water, alcohol, 5 percent tincture of iodin, and formalin.

18. Articles for anesthetic table: one hypodermic syringe, strychnin 1/30 grain, and brandy, ether, and mask.

19. One small sofa pillow and blanket for patient.

20. Two water bottles for cold sterile water; one preserving kettle for hot sterile water.

Dressings to be sterilized for one operation:

One sheet.
One-half dozen long towels.
One-half dozen short towels.
Two dozen flat sponges (large and small).
Two bags small sponges.
Two dressings and bandages.
One cap, gown, and pair of rubber gloves for each surgeon and nurse.
Roller dressing for leg or arm case.
Ether or chloroform mask.

STERILIZATION OF SUTURE AND LIGATURE MATERIAL.

Iodin Catgut—Claudius' Method.—The usual commercial variety is wound into small rings or on glass tubes, placed in a covered glass jar with the following solution: 1 percent iodin in distilled water with sufficient iodid of potash to saturate. The solution is made by dissolving 1 part of iodin and 1 part of potassium iodid in 100 parts of water. The potassium iodid is dissolved in a small quantity of water, to which the iodin, finely pulverized, is added, and the concentrated solution then diluted to L5.

The solution and catgut are kept in a jar with wide mouth, which is covered with accurately fitting glass stopper. The date and number of the catgut is written on the label of the jar. After eight days the solution is drained off, and catgut washed with *absolute alcohol,* being careful to use sterile instruments in handling catgut; this alcohol is then drained off and fresh *absolute alcohol* added, filling jar to the top, and the catgut is ready for use.

Catgut thus prepared is soft, pliable, and strong. The knots are firm and not liable to slip or loosen, and according to its size resists absorption for from seven to twelve days.

Chromicized Catgut.—The usual commercial variety is prepared by the iodin method; after that it is stretched on wooden frame or wound on large test tubes. To chromicize to the desired degree, place catgut for five, ten, or thirty hours in the following solution:

Bichromate of potash	1/5	grams
Glycerin	10	grams
Carbolic acid	10	grams
Distilled water	480	grams

Dissolve the bichromate of potash in the water, then add the glycerin and carbolic acid. After five, ten, or thirty hours remove the catgut from the solution and leave on frame or test tubes for drying. Dry in a temperature not exceeding 40 to 50 degrees C. The drying process should extend over several days. Cut the catgut, when thoroughly dry, into pieces one meter in length, roll on the fingers into small coils, pack in small glass jars, and cover with *absolute alcohol;* with washer and screw top make the jar fluid tight, put small jar into larger jar containing from 2 to 4 ounces of absolute alcohol, screw down air and fluid tight, and sterilize in Arnold sterilizer for five hours, or in autoclave for one hour at 15 pounds pressure of steam. Remove cover of sterilizer and allow contents to cool gradually. By readjusting washer and filling the jar with absolute alcohol to replace that lost in the process, the catgut is ready for use.

PLANS AND DESCRIPTION OF A $400,000 HOSPITAL.

The Problem in the Wichita Hospital Was to Create a Complete Scheme and Build Gradually Around and in Place of an Old Building.

By L. B. SIMPSON,
OF KEENE & SIMPSON, ARCHITECTS, KANSAS CITY.

THE hospital site is an entire block 260 feet square. The present building, which is a remodeled business building, stands at the southwest corner of the block. The problem that confronted us was to design an addition that would be a complete hospital within itself, and without alterations when the project is completed. The next step will be to complete this building to the north, shown at B on plat plan; then the nurses' home, shown at A. Building B will be mostly wards, with few bed rooms. Portions shown at C indicates sun rooms. After buildings A, B, C, and D are completed, the old building (shown by dotted lines) is to be razed and the administration building E and building F are to be completed. The first addition shown at D will cost about $70,000, while the completed scheme will cost about $350,000 to $400,000.

The buildings will be of fireproof construction, with outside walls of tapestry brick and stone trimmings, designed along simple lines. There will be a hot-water heating system, with the boiler in the old building for the present, the power house to be built later. The main kitchen will be in the old building, with diet kitchens on each floor of the new building. Main kitchens will

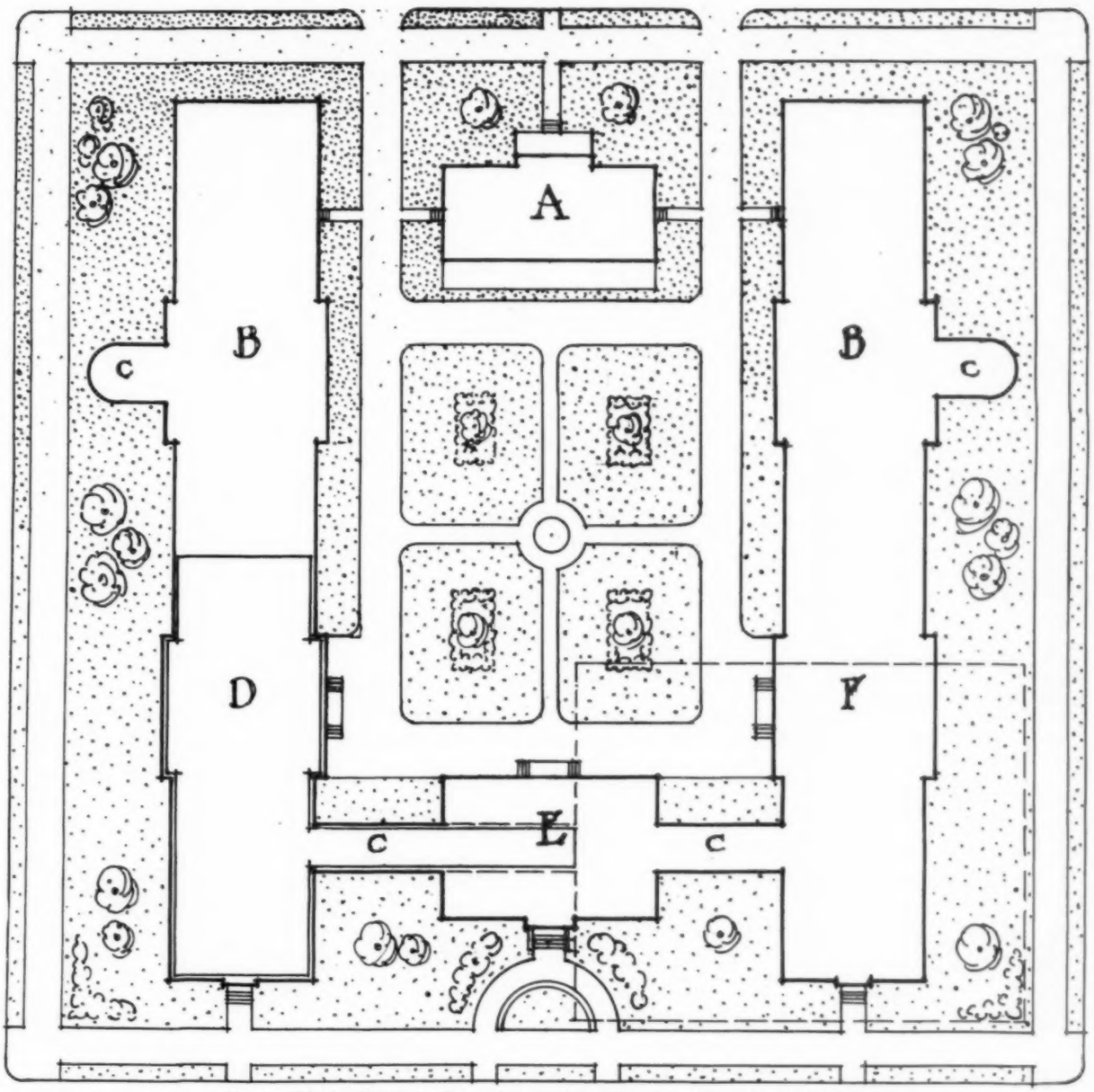

Fig. 1. Wichita Hospital—Block plan. Old building now in use in dotted lines.

be placed in building B afterward. There are no wards in building D, except a children's ward on the fourth floor.

On the first floor are located the temporary main entrance, offices, and reception room, ambulance entrance, surgical dressing room, and bed rooms. The second, third, and fourth floors will have bed rooms and hospital service rooms. On the fifth floor will be the operating rooms and roof garden. All bed room floors will be of oak, with

Fig. 2. Wichita Hospital—First floor plan, with administration.

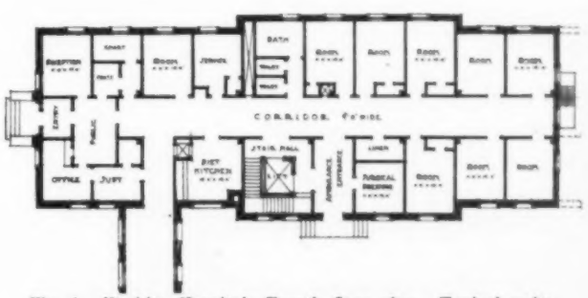

Fig. 3. Wichita Hospital—Fourth floor plan. Typical units.

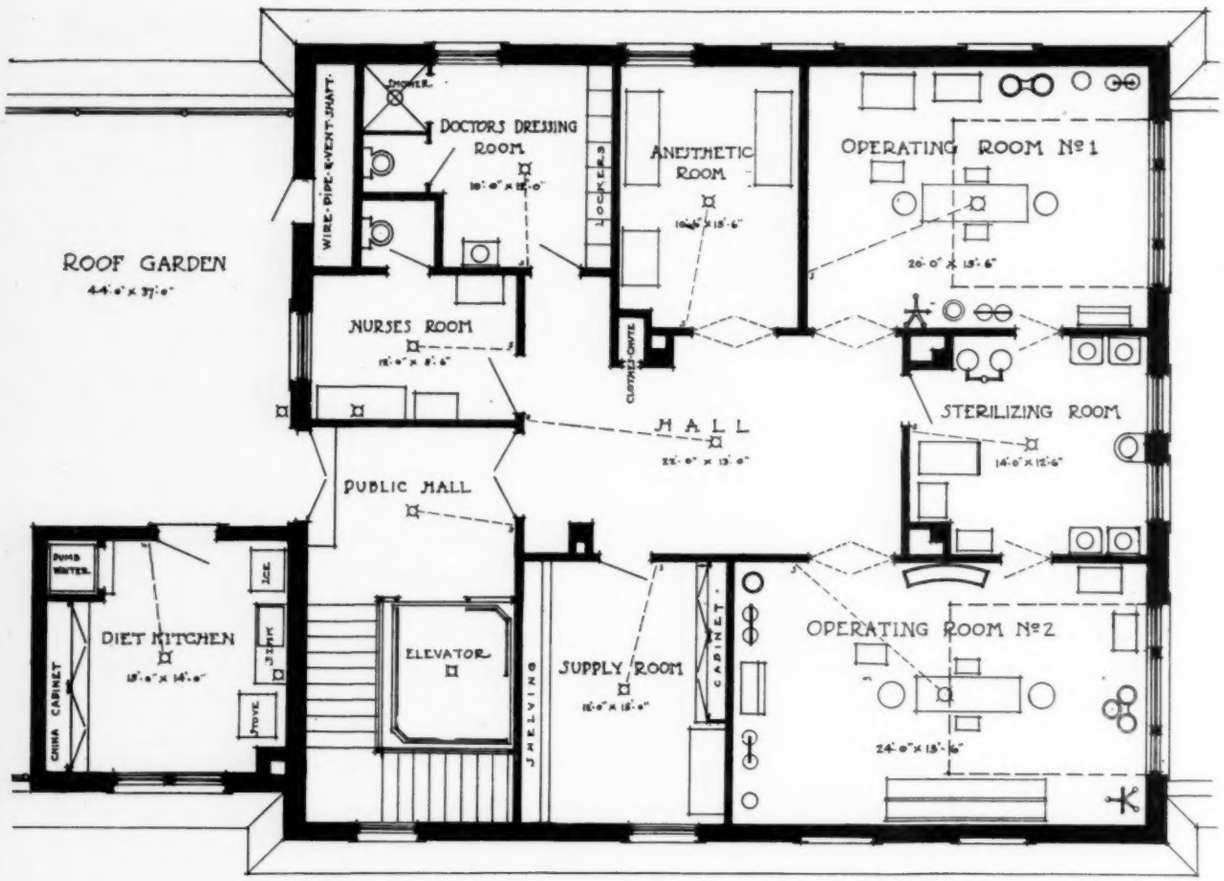

Fig. 4. Wichita Hospital—Fifth floor plan. Operating rooms.

marble window stools. Toilet and operating room floors are to be of tile. Floors in corridors are to be composition. Radiation is direct, with ventilation through the transoms to the halls, the halls to be ventilated by transoms at either end. It is the intention to carry this system of ventilation throughout the entire scheme, except in operating rooms. Silent signals and telephone connections are to be in each room. All corners in the plastering are to be rounded, and little or no wood will be used. The connecting corridors C will be wide enough to act as a sun room and a corridor between the buildings.

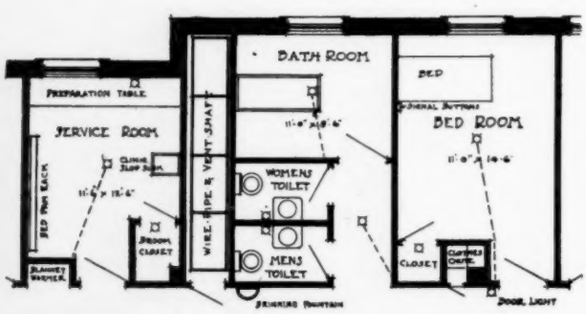

Fig. 5. Wichita Hospital—Detail of service portion of first, second, third, and fourth floors.

We All Know This Patient.

Recently the following was received at the East Side Clinic, New York, which is self-explanatory. Such letters as this are some compensation for the unpleasantness and drudgery of work in the clinics:

"Dear Doctor: I, Mrs. ——, one of your patients whom you sent to Otisville, takes the liberty of writing these lines to you. Allow me to thank you for sending me to such a nice place as this. May God bless you and save you, so that no harm may ever come your way. Believe me, Doctor, if I can't get cured here, there is no hope for me.

"I was born and brought up in New York, and never did I breathe such pure air as is here; all I had was garbage barrels around me and sputum to step in all around, and the air from the gas house nearby; no sunshine before my eyes all day long, nothing but darkness, and I seemed happy. Could you imagine how I feel now. I feel as though I was dying and arose to heaven.

"Thank God you had pity on me and sent me away. Why not help my husband to get here, so that he, too, may breathe some pure air. He is a citizen, a good one, too; a man that has suffered a good deal in life; he was always a good husband; never drinks nor smokes nor gambles, but always tried to make an honest living for me; he is being treated in the clinic for the past two years and is always ailing. Send him here for the summer, please. He will be willing to do any work in return. Please, Doctor, help him get away. By so doing, oblige,

"Mrs. ——."

"P. S.—Dear Doctor: I was put to work already, and, believe me, I am doing it cheerfully. Anything to get a breath of this pure air. Please send my regards to the head nurse with the light hair, that sends our cards upstairs. She is some lovely person."

A cannery is being installed at the Dayton (Ohio) State Hospital.

ADVANTAGES OF STATE CONTROL OVER TUBERCULOSIS HOSPITALS.[1]

There Should Be Adequate and Permanent Supervision Over County Institutions by Trained Specialists—Unwise Methods Destroy Value of Institution—Permanent State Commission Best Form of Control.

By H. LONGSTREET TAYLOR, A. M., M. D.,

PRESIDENT ADVISORY COMMISSION MINNESOTA STATE SANATORIUM, MEMBER AMERICAN CLIMATOLOGICAL ASSOCIATION, CORRESPONDING MEMBER INTERNATIONAL ANTITUBERCULOSIS ASSOCIATION, DIRECTOR POKEGAMA SANATORIUM, ST. PAUL.

IN the work of caring for the consumptives in county institutions, many questions of policy arise, both in handling the funds and in the management of the institutions, in order to obtain the best results for the taxpayers, who have supplied the money and which have to be accounted for by those officers of the state to whom have been intrusted the public funds appropriated for this purpose.

The community which says, "It is a good thing to have a sanatorium for our consumptive poor; come, let us build one," and, having built the institution, intrusts it to the nearest physician, without regard to his special fitness for the work, often becomes so dissatisfied with the results obtained that its members lose all faith in the sanatorium idea. The reason for their disappointment is not far to seek; the institutional care of a consumptive, to be successful, is a highly specialized branch of the practice of medicine, and cannot be acquired by the reading of many books. Every step in the location, planning, construction, and management of these institutions should be in the hands of experts, and should not be left indiscriminately to the county authorities or to the local profession, without the control of a board with state-wide responsibility. The duties of this board should not cease with the building operations, but should continue throughout the life of the sanatorium. Its powers should in some way be greater than an advisory board, and it should be able to see that its suggestions are put into effect. If this is not the case, an institution that has been properly launched can soon deteriorate to the level of an ordinary poor farm, and the patients suffer for the want of proper discipline, food, and medical attention.

The Minnesota law was drawn up very carefully by a committee appointed by the State Board of Health, of which the writer was a member. That committee attempted to draw a law which should avoid the dangers above enumerated. It intrusted the duties of supervision to a commission, already existing in the state, whose powers had been previously entirely advisory, and confined to the State Sanatorium for Consumptives. It is the duty of this commission, when a county or group of counties levies a tax for the construction of a sanatorium, to assist the local commission in the selection of a site, in the preparation of the plans and specifications, and in the erection of the proposed sanatorium. The superintendent of the new institution must be approved by the commission. The manner in which the institution is conducted is subject to scrutiny every month. The suggestions of the state commission can be enforced because the state of Minnesota pays half of the bills for the site, construction, and equipment up to $50,000, and after the institution is open the state pays on the order of the commission $5 a week for each charity case cared for. In this way uniformity in the general plan of the buildings, in the care and treatment of the patients, and in the records of the institutions is secured.

The county institutions are required to admit any resident of the county if he has pulmonary tuberculosis in any stage. The examining physicians of the State Sanatorium for Consumptives, at least one of whom is located in each county, will determine whether the patient has tuberculosis. The county institutions are particularly intended to care for the advanced case, and the law provides that advanced cases shall always be given preference over others on the waiting list. The incipient cases can be cared for at the state sanatorium, which is designated as a place where only incipient cases shall be treated. For that reason the smaller the district served by any county institution the better, because the friends of the patient will not have to travel so far to see him, which would not be the case if many counties joined together and the institution took patients from a large territory. The institution should be near the patient's home. To keep the institution full, any vacant beds are at the service of neighboring counties at a price sufficient to pay for the cost of maintenance.

The lack of uniformity in the conduct of county institutions in most states, especially since there are not a large number of men to be had who have had the advantages of training in sanatoriums for the care of consumptives, is greatly deplored. We who are interested in the success of the antituberculosis work should stand shoulder to shoulder in

[1] Paper read before the American Climatological Association, Atlantic City, June 20, 1914.

the demand that every institution must be under the supervision of competent men, even if it is not possible to put an expert superintendent into all of the smaller institutions. Some county institutions in the United States are so organized that no good can come of them, and the cause is sure to suffer if they are to go on and others are to be opened. There is too much laxity in the passing of antituberculosis legislation that has not been carefully considered from all points of view before it is brought before the legislatures. A concrete example is the following extract from the pen of Dr. J. H. Gifford, of Fall River, "Evolution of Policy Concerning Tuberculosis Hospitals" (THE MODERN HOSPITAL, February, 1914):

"The state Legislature of 1911 passed a law requiring each city having a population of 10,000 or over to construct and maintain a local tuberculosis hospital, toward the support of which, after its approval, the state agreed to pay practically the same amount that it expends in the support of the state tuberculosis hospitals already built. The cost of building these hospitals equals the whole expense of maintenance for about one and one-half years, so that the state practically sacrificed the full control of these hospitals to this cost of construction, which represents the state's share of the maintenance for three years. A feature of this law is that it gives no specification as to capacity, or location, or material, or equipment, or standard of management of such a hospital. It simply conditions the state support on the approval of the hospital by the State Board of Trustees of Tuberculosis Hospitals."

Dr. Gifford describes the predicament of Fall River, which city built its hospital, but failed to get the approval of the State Board of Trustees of Tuberculosis Hospitals, although their taxes go to pay for the tuberculosis hospital of Boston and the other cities of Massachusetts that have built institutions.

The Minnesota county sanatorium law, chapter 500, laws of 1913, is a sample of the best legislation to be found in the United States on this topic. Its practical application and the way it is working out are most gratifying. One year after it was approved, practically one-third of the counties of Minnesota had taken action, and before long there will be a sanatorium for advanced cases of consumption near every Minnesota home.

In a report recently made to the governor of Minnesota by Public Examiner Andrew E. Fritz on the state hospital for the insane at Rochester, it is stated that for the fiscal year ending July 31, 1913, the cost of raw food per patient per day at that institution was 15.3 cents. The gross expenditure for each patient for the year was $173.81. Products of the hospital farm amounted to $55,329.18.

The lunacy committee of the Pennsylvania State Board of Charities has announced that it will ask the next Legislature for appropriations for two new hospitals for the indigent insane—one in the southeastern and the other in the southwestern part of the state. The congested condition of the present state hospitals at Norristown, Philadelphia. and Pittsburgh is given as the basis for the recommendation.

BELLEVUE MEDICAL STAFF REORGANIZATION.

Board of Estimate and Apportionment Already Responsible for Many Reforms in Hospital Practice—Proposes Unique Staff Arrangement.

The Board of Estimate and Apportionment of New York City, under the direction of Mr. Henry C. Wright, has proposed a radical reorganization of Bellevue and the Allied Hospitals in matters concerning their medical service. After a thorough investigation of conditions as they exist, Mr. Wright has made a report that contains some of the most interesting propositions of modern-day medical service.

He begins his report by stating conditions in Bellevue as they exist at the present time. The medical service of the hospitals is divided into four parts. One part, or division, is conducted under the auspices of the College of Physicians and Surgeons of Columbia University; another part under Cornell Medical School; the third division under New York and Bellevue Medical School, and the fourth division is known as an "open division," wherein physicians may serve who are not connected with any medical school.

Some of the services are directly under the supervision of the hospital, such as the alcoholic department and the psychopathic, the school for midwives, the tuberculosis camp boat, and the pathological department. The house medical staff at the present time is practically under the jurisdiction of and is appointed by the medical school controlling each division.

In order to develop just what kind of service the sick poor of Bellevue are getting under present medical staff arrangements, Mr. Wright undertook some systematic inquiry, and in his report has shown in detail that the medical service of the hospitals is not what it should be, and he has found that a good many abuses exist, such as insufficient time given by staff members, insufficient attention to diagnosis of diseases, and want of proper interest as developed in the failure of staff men to call for or witness post-mortem examinations. He finds that house staff members and attending physicians have been discharging irresponsible patients at the request of influential friends, and he finds that the superintendent of the hospital has been confined to a mere perfunctory performance of administrative duties concerning the welfare of patients, and that the obligations of the hospital have been largely assumed by members of the medical staff, who have not always acted for the best interests of the sick. He finds that visiting staff members have too often left the responsible duties of medical ministration to inexperienced interns, and he finds that these interns, in their turn, have oftentimes discharged patients who should not have been discharged, because of the interest of the young men in a large number of more interesting cases. He finds that clinical histories have been so carelessly and inadequately kept that they have become of little value, and he finds that little or no scientific work has been done by the attending staff, because of the small amount of time they have found it expedient to give to the service. The report does not stop with complaints of poor conditions, but suggests a way out of the difficulty in the form of a complete reorganization of the medical staff. Some of the proposals follow:

PLAN OF REORGANIZATION.

1. Control to remain in a board of trustees, to which shall be delegated power to determine general matters and policies. Such board to appoint a superintendent for a prescribed period of years, who shall have full administrative control of the hospital and out-patient department.
2. Control of admissions, distribution, discharges, and social service to be under the charge of the superintendent.
3. Present medical board to be supplanted by an advisory committee

constituted as follows: the chiefs of the medical services, the chiefs of the surgical services, the pathologist, and the superintendent. Such committee to have no power other than advisory. (Four medical and four surgical services, representing three medical colleges and one open division.)

4. The out-patient department to be an integral part of the hospital, both from an administrative and a medical standpoint. The medical and surgical attendants of each division of the out-patient department to be appointed by the trustees on nomination by the medical and surgical chiefs of the respective divisions of the hospital and the advisory committee.

5. Each medical school to be required to furnish a continuous service by means of a paid chief of its medical and also of its surgical service; such chiefs to be paid in part by the medical schools, the city to pay one-half of the salary when such half does not exceed $2,500 per year. Heads of the fourth division to be nominated by the council of the academy of medicine and the entire salary paid by the city; such chiefs to be appointed for a term of years and to serve in the hospital, on an average, not less than one-half of each day. An age of retirement to be established. A service of attending physicians and surgeons associated with such chiefs to be provided for. Nominations of the attending staff for each division to be made by the respective chiefs of such divisions and by the advisory committee. Special services to be assigned to the various divisions for designated periods, with some possible exceptions. All nominations to be submitted to the board of trustees for approval.

6. A resident physician for the medical service and a resident surgeon for the surgical service of each division to be employed; one-half of the salary of such residents to be paid by the city and one-half by the respective medical schools. Appointments for such positions to be made for a specified term by the trustees on nomination by the chiefs of the respective services and the advisory committee.

7. Interns to be nominated by the advisory committee after an examination held by the committee, the form of which to be approved by the board of trustees. The appointment to be made by the trustees. The results of the examination to be made a matter of record.

8. The trustees to reserve the power to discontinue, for cause, the services of any medical officer, chief of service, resident or attendant physician, surgeon, pathologist, or intern, whether paid or unpaid; if paid, whether paid by a college or by the hospital or partly by both.

9. In the pathological department the salary of the director of laboratories to be paid by the city; his functions and duties to be as follows: (a) to have general supervision of all laboratories connected with the hospital and all the work carried on therein; (b) to keep all records of findings; (c) to perform or control the performance of all autopsies; (d) to control the use of all organs and tissues; (e) to direct the work of the pathologists assigned by the colleges.

Each college division to nominate a pathologist whose appointment shall be subject to the approval of the director of laboratories and the trustees of the hospital; the salary of such pathologist to be paid by the respective colleges, and to be not less than $1,500 per year; the entire time of these pathologists to be devoted to work at the hospital; the amount of teaching and research work to be carried on to be regulated by the respective colleges, subject, however, to necessary routhe work assigned by the director of laboratories.

Mr. Wright's report does not stop with the above recommendations, but goes into detailed explanation of all the reasons why the various propositions are offered, and, to further entrench the board's proposals of reorganization, the report contains an appendix of letters from a large number of eminent physicians and surgeons in this country who were asked for their opinions as to the wisdom of the various items in the proposed reorganization. Some of those whose opinions were asked are Dr. Charles H. Frazier, of Philadelphia; Dr. Frank Billings, of Chicago; Dr. Alexander McPhedran, Toronto; Dr. Rufus Cole, Rockefeller Hospital; Dr. F. A. Washburn, Massachusetts General Hospital; Dr. George Dock, Washington University, St. Louis; Dr. Alfred Stengel, Philadelphia; Dr. David A. Edsall, Boston; Dr. Richard C. Cabot, Boston; Dr. George W. Crile, Cleveland; Dr. Winford H. Smith, Johns Hopkins Hospital; Dr. Theodore C. Janeway, New York; Dr. George Blumer, dean of Yale Medical School; Dr. Henry A. Christian, Peter Bent Brigham Hospital, Boston; Dr. Simon Flexner, of the Rockefeller Institute; Dr. Graham Lusk, Cornell Medical School, and others. The doctors were by no means unanimous concerning the proposed reorganization. A majority of them believed in a paid medical chief of each service, but some of them doubted the wisdom of a partnership between the city and the medical schools. Some of the men thought all the administrative activities of the hospital ought to be conducted under the jurisdiction of the superintendent of the institution, and that the medical staff members were not in a good position to be charged with administrative responsibilities of any kind. Some of the men thought that, while faculty members of the medical schools should be appointed chiefs of the services, the schools themselves should have nothing to say about their appointment. Others thought the appointments should come directly from the medical schools, and that the trustees of the hospital should have no voice concerning them.

It will be interesting to watch the reorganization scheme of Bellevue because some very important problems will be solved.

NO LANGUAGE BUT A CRY.

Infants Whose Food Is Now Given Adequate Attention Must Also Be Comfortably Clothed.

It takes a baby lover, with imagination, to understand the needs of infants, and often those needs are sorely neglected, not so much from lack of affection, for of affection, of an uninformed kind, there is plenty; but the discomfort and ill-health extending far beyond babyhood, caused by ill-considered clothing and feeding, has added much to the sum of human misery, and misery in a class of the community which should, before all others, receive tender consideration, the class which is wholly dependent on its elders and has "no language but a cry."

Medical science is slowly—very slowly—teaching us something of the dieting of infants and young children. Now we know that cow's milk can be divided into its constituent parts and recombined in such proportions as to defy differentiation, on analysis, from human milk, and that doctors who have studied the question can prescribe a "milk mixture" suited to the digestion of almost any baby.

What has science to say about the clothing of infants? Very little. Partly because clothes are essentially woman's province, and few women have studied the question from the scientific standpoint.

Still there is that pitiful cry, the baby's sole method of indicating discomfort, as well as many other things. The uninformed, perhaps the average mother, picks him up, rocks him in her arms, pats him on the back and says, "There then." If that is insufficient, she rings the nursery bell and summons nurse. And all the time, maybe, baby is trying hard to let her know that the clothing selected for him is quite unsuitable, that the square he is wearing is sodden and irritating, that closely woven linen and bath toweling are entirely unsuited for his wear, and that if the grown-ups would only turn their attention seriously to the elementary requirements of babyhood, he would be a much happier and more contented little person.—*British Journal of Nursing.*

Hahnemann Hospital, Rochester, N. Y., has lately opened its new administration and maternity building. It is a thoroughly fireproof structure of three stories and a basement. The basement story is of stone and the other stories are of brick, with floors of terra-cotta. The roof is covered with tarred paper, which is coated with slag. All partitions are of hollow brick. The outside walls are lined with furring, to do away with dampness. In the basement are an emergency room, a nurses' dining room with accommodations for sixty persons, a serving room, a plaster of paris room, and three other rooms that can be used for any purpose desired. From this entrance patients can be taken to the emergency room, or, by the elevator to any floor. On the first floor are the administration office, the superintendent's office, the doctors' waiting room, the dispensary, two private rooms, sitting room, sleeping room, toilet, porch, etc., for interns. The entrance to the interns' room is by way of a private hall. The second and third floors are for maternity cases. There are a delivery room, nurseries, sterilizing room, bath rooms, closets, cupboards and the like for the care and comfort of patients. The architecture of the building is colonial. The interior finish is of quartered oak of a dark shade, with brass trimming. Each room is thoroughly ventilated. Heat is supplied from the hot-water plant in the basement of the ambulance barn, about 250 feet distant.

The MODERN HOSPITAL

Editorial Office . . . . . Tower Building, Chicago
Business Office . . . Metropolitan Building, St. Louis

EDITORS.

Henry M. Hurd . . . . . Calvert Building, Baltimore
Frederic A. Washburn . Mass. General Hospital, Boston
Winford H. Smith . . Johns Hopkins Hospital, Baltimore
S. S. Goldwater . . . . . Mt. Sinai Hospital, New York
James G. Mumford . . . . Clifton Springs, New York
W. L. Babcock . . . . . Grace Hospital, Detroit
John A. Hornsby . . . . . Tower Building, Chicago

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Contributors, subscribers, and readers will find important information on advertising page 26.

Hospitals Are Standardizing Themselves.

Four years ago Dr. H. B. Howard, in his address as president of the American Hospital Association, at St. Louis, begged for improvement in hospital conditions and urged elevation in standards. In June of that year, preceding the September hospital meeting, the American Medical Association also met at St. Louis, and a petition was presented to the house of delegates asking for the creation of a section on hospitals, avowedly for the purpose of stimulating the medical profession to a more acute and effective interest in hospital activities.

It seemed at the time that Dr. Howard's plea had fallen on deaf ears, and the American Medical Association declined to create a hospital section on the ground that no convincing reason for it had been shown. But during the following year the members of the medical profession were thinking and the result was that at the Los Angeles meeting, the following year, the section on hospitals was created by unanimous vote of the American Medical Association delegates, although no petition was presented, and only one medical man, who happened to be also a hospital administrator, was present at the meeting to present the matter.

Then began a movement to investigate the hospitals of the country with a view to setting some standards along lines of progress, but there was not a whole-hearted unanimity in favor of such investigation. Some of the hospitals set their disapproval on the proposal in no uncertain way, and declared that they would not have the privacy of their institutions invaded. Not only was there an open fight against the proposal—every effort made to bring the movement to a constructive point was met by unseen, silent hindrances. A proposal to get government sanction and support for the proposition "died abornin'." Agencies that seemed almost ready to advocate and go into the work suddenly became apathetic, if not actually antagonistic. The result was that no workable scheme for investigation and standardization was set in motion.

But the movement itself, like all good things, grew out of its own merit. Medical men began to think, and to write, and to talk. They began to look closer into the workings of their own hospitals and to insist on improvements here and there—in equipment and in methods. Trustees who had theretofore been complacent and self-satisfied began to wonder and to ask questions. Then the inevitable happened—the people began to wonder about hospital conditions, and to make inquiries before they permitted themselves to be taken to a hospital. The people began to study about hospitals, and to ask their doctors about certain methods of hospital procedure; they began to absorb a good deal of correct information about modern medical methods and the present state of the science as it was developed in the hospital care of patients—and, better than all, they began to be discriminating about the relative merits of hospitals for purposes of caring for their sick. This attitude, in turn, had a good deal to do with the sudden interest of some of the doctors, because the people began to wonder if the ability and up-to-dateness of their doctor had not some relation to the up-to-dateness of the hospital in which he practiced. Latterly, people are beginning to value a doctor's qualities somewhat by the character of the hospital to which he belongs; and so, by a little every day, there has come a stimulus, from many directions, that has resulted in a taking of stock of themselves by the hospitals.

More specifically, health activities in various of the more progressive communities began to take on the character of coordination. New York was first perhaps to assemble these activities. The association of a few hospitals to formulate a uniform system of accounting had already borne fruit. Then came the purchasing bureau as the result of the interpretation of the work that had been done in connection with bookkeeping and the wastefulness of individual enterprise shown therein; then followed the Conference of Hospitals, a splendid, working force. The Saturday and

Sunday association, with its large purse and rigid requirements, followed. The governing bodies of the city and state took up the work, and under the masterly lead of the board of estimate and apportionment, and Mr. Henry C. Wright, is going far in the solution of problems affecting not only public, but private institutions, in matters economical, social, and sociological.

Philadelphia has grouped fifty-five of its hospitals into a coordinate scheme, having for its special object the cutting down of community expenditures for hospital and allied purposes, and raising standards of service.

Cleveland came next with the added feature of centralizing the collection of money for all health activities in the hands of one of the recognized and respected civic bodies, with power to prohibit the collection of funds without authority.

Many cities have begun along similar lines, and doubtless before long many coordinated bodies will be at work in every large community, each body with its own special service, but all participants in an organized, homogenous scheme of health betterment.

Thus we find that, though standardization failed for the moment, or at least failed to work out in the prearranged way, yet the real purposes are in course of achievement along educative, constructive lines. truly "The Lord doth work in devious ways His wonders to perform."

Dr. Smith's and Miss Greener's Papers.

With this number of THE MODERN HOSPITAL the two series of papers, the one by Dr. Winford H. Smith and his associates in the Johns Hopkins Hospital, and the other by Miss Elizabeth A. Greener, of Hackley Hospital, have come to an end.

Letters of thanks and commendation and of congratulation have come to THE MODERN HOSPITAL about these papers—thanks for their helpfulness, commendation because they are the first coordinated and connected stories of the daily routine practices of two representative hospitals of their type ever published, and of congratulation for the inspiration that led to their publication.

In a few of the letters it was urged that these two hospitals were not fairly representative of their types, and that because of their splendid endowments they were in position to accomplish things that other—and struggling—institutions could not hope for.

This is fundamentally the reason why Johns Hopkins and Hackley hospitals were chosen as examples, and why Dr. Smith and Miss Greener, after much urging, were prevailed upon to prepare the papers—to show, not what might be done in hospital administration under stress of the financial struggle common to the great majority of American institutions, but how things were actually being done in two institutions, representative of their class, where efficiency could be held paramount, unfettered by financial limitations.

There is an editorial in another column of this issue showing how the hospitals of this country have begun to standardize themselves in the absence of the stimulus of investigation from the outside and the setting of standards based on such investigations.

The writer of this editorial, on the firing line of the movement to standardize hospital efficiency since the active propaganda began, had come face to face with almost insuperable obstacles to the investigation of the hospitals by classes, and nearly a year ago recognized that the work, if it was to meet with even partial success in the near future, must be commenced in another direction, and he believed this purpose would be best served by presenting to the hospital people some examples of routine hospital practice that might furnish inspiration and comparison for those who were really eager for improvement. The results have been far greater than the instigator of the scheme even dared to hope.

And now to obtain the greatest possible benefits from these papers. They are not to lie unemployed and unconnected in past volumes of THE MODERN HOSPITAL. They are to be assembled and bound in enduring form, so that they may be kept on the desks of hospital workers for daily reference.

The papers from Johns Hopkins Hospital were prepared by the heads of the various departments of that institution, whose activities were under discussion, men and women chosen for their peculiar fitness for the service involved, and trained by Dr. Smith and his medical advisers to the highest degree.

Unfortunately for her, considering the vast labor involved, Miss Greener was obliged to prepare all her papers herself. But there was an advantage in this, because all the subjects could be interwoven and made integral parts of one complete machine to a degree hardly possible in so large and complex an institution as Johns Hopkins Hospital.

These two series of papers are epoch-making, and will stand for a long time as the high watermark of institution efficiency—the one for the large general hospital, and the other for the small general hospital. THE MODERN HOSPITAL congratulates itself that it was the inspiration for their preparation, and the vehicle for their pub-

lication to the hospital world, and THE MODERN HOSPITAL, believing that it voices the feeling of conscientious hospital workers everywhere, begs to extend the sincerest thanks to Dr. Winford H. Smith, his associates, and Johns Hopkins Hospital, and to Miss Elizabeth A. Greener and Hackley Hospital for the most practical pronouncement on hospital administration that has ever been published.

JOHN A. HORNSBY.

Nursing—and "The Modern Hospital."

The nursing problem in this country is a large and broad one. There are many details not yet settled—else it would not be a problem. Good nursing is a vital factor in good hospital service; to that extent THE MODERN HOSPITAL is deeply concerned about nursing activities. But THE MODERN HOSPITAL has no settled convictions on the mooted points of nursing ethics; indeed, its own editors do not see the details exactly from the same viewpoint. Because of this fact, every article and every editorial that has been published on nursing has been signed by the individual editor or contributor who wrote it, and this will continue to be the case. It would seem that this policy ought to leave THE MODERN HOSPITAL an open forum for the publication of every worthy opinion on nursing ethics and nursing ideals; indeed, at the time that announcement was made of Miss Riddle's consent to become editor of the Department of Nursing, this attitude was clearly stated, and everyone interested in nursing was invited—in fact, urged—to contribute his or her opinion, so that we might arrive at conclusions by frank discussion.

But in regard to one phase of nursing THE MODERN HOSPITAL has some very settled convictions, and concerning these all its editors are of one mind, and on this phase it has a definite policy. Briefly, its *credo* may be summed up as follows: we believe that there are some little misunderstandings extant that have grown by aggravation until they seem very large and very serious; but we do not believe that they are in reality either large or serious; and we believe that friendly discussion, even if it should happen to take the form of the Irishman's picnic, where every head was hit, will eventually settle everything right.

It was in this serene belief that we asked Miss Riddle to guide the Department of Nursing, and we promised to give her a free hand. We have not only done so, but we are still glad to do so. Miss Riddle has brought many friends to THE MODERN HOSPITAL—friends that are well worth while, and whose friendship and good offices are to count in the final attainment of a universal harmony on points that now seem sore and irritated.

We are nearer to a perfect understanding today than we were a few months ago, and it is on such level-headed, sensible women as Miss Riddle, Miss Nutting, Miss Noyes, Miss Crandall, Miss Cooke, Miss Parsons, and their associates, that we may rely for many wholesome adjustments in the future.

That there are radical opinions on some nursing points is not to be denied. Some of this radicalism is mere zeal, some of it is misjudgment and a narrow viewpoint, but a separation of all the forces consecrated to the service of the sick into two hostile camps, each with a battle cry of "No quarter!" is not likely to cure anything. Indeed, there would be scars left that would cripple the usefulness of every participant for many a long day; that would hurt scientific progress in medicine, hurt nursing, hurt the hospitals, and through these hurt mankind. If we are to fight, let it be shoulder to shoulder, against that dreaded trinity—Disease, Ignorance, and Crime.

An Inspiring Contract.

The mayor of Boston has recently directed the trustees of the Boston City Hospital to work out a program of expansion and improvement of that institution to embrace the next twenty-five years.

This is precisely as it should be, but almost uniformly is not; very generally it is the custom of hospital trustees, at least in this country, to build just what is needed today, without any reference whatever to the future, and without even planning the building so that additions can be made in a homogenous way to admit of economical and practical administration.

It would seem to one who has given some study to hospital conditions and possibilities that this Boston board has a most inspiring and interesting piece of work cut out for it. Hospital activities, if not yet maturely standardized, have at least taken on a trend and a direction that holds a very strong portent for the future. At the Boston meeting of the American Hospital Association last year Mr. Bradley, in his instructive paper, gave some figures covering a limited area in Massachusetts and a limited time, which showed that only 11 percent of the sick who were under a physician's care went into a hospital, and similar figures were cited showing that for the same period only 13 percent of the sick people of Birmingham, England, one of the best hospitaled cities in Europe, went to a hospital.

And yet it has come to pass that a person really sick cannot have the best care known to medical

science anywhere but in a properly equipped and well-managed hospital. Bedside diagnosis, we recognize now, must fall far short of what we can do to determine the nature of the patient's disease; we need the laboratory of pathology, and the various agencies available therein; we need the x-ray apparatus; and we not only need these adjuncts, but we require that they shall be manned by specially trained people, whose business it is to not only read their findings, but to interpret these for the benefit and aid of the clinician. And after the diagnosis has been made we need one or more forms of the vast aggregation of apparatus devised for treatment, and which can be assembled only in a hospital. The complicated machinery necessary in the diagnosis and treatment of disease, it is obvious, is not to diminish in quantity or character, but must grow even greater, and must require for its operation increasingly greater technical skill.

Even if we are to stop short with the definitely sick man, woman, and child, it must be patent to all thinking people that the hospital must eventually become a necessity to every member of every community, and, if only 10 percent of the sick now go to the hospital, there must soon be ten times the present number of hospital beds.

But we assuredly are not to stop with the sick who can be benefited under present medical knowledge. Diseases that were incurable a few years ago are now under scientific mastery, and the number of these is increasing rapidly. Defectives, deficients, the insane—every form of human imperfection, mental, moral, and physical—all these are under scrutiny by the ablest minds of the day, aided by every device known to science and art. Huge numbers of people who now hobble haltingly through life, with a handicap they cannot carry, are being set upon their feet, their handicap removed, and their lives freed from the inequality of the struggle. The criminal of today, the moron, the defective, the irresponsible, are to be hospital patients tomorrow, and the workshop of the master craftsman is the modern hospital.

But even here the beneficence of the hospital does not cease. The burdens of poverty, the wasted effort of the inefficient, the hard hand of power bearing upon the weak—all these unevennesses must be studied and corrected, and the hospital of the present must be the school and the clearing house of the future.

The hygiene, the sanitation, the cleanliness, the physical right living of all the people must be looked after, and the teacher must work out from the hospital, where the tools are kept and their uses taught. Out-patient and visiting nurse service, the community paid health officer—these are today merely a hint of the future.

The Boston City Hospital board has been cleared for a momentous voyage; it must explore the future, not for its own institution alone, but for all of us. Hospitals the world over are interested in the voyage. May the pilot be sober and watchful! May the helm be in a steady hand, with a far-seeing eye to guide it!

Sanatorium Progress.

Not long ago a faithful representative, in whose word we trust, made a pilgrimage among the leading general sanatoriums of the country. He found much to commend; and returned to the fold, convinced that these institutions are throwing off their reputed bad manners and traditions, and are coming back to the practice of scientific medicine. A few years ago some of the stories about sanatoriums were not pleasant to hear—there used to be talk of questionable ethics and dusty morals. Even the much-debated "fee-splitting" was charged against a few. Our ingenuous pilgrim thinks that this is now unfair—is a false charge. Apropos it is interesting to observe that at a recent meeting of the Monroe County Medical Society held in Rochester, N. Y., that charge of fee-splitting by certain "institutions" was revived. Statistics gathered by a committee of the society seemed to bear out the charge. Now, fee-splitting—called "graft" by the uninitiated and "the buying and selling of patients" by the purist—is an intricate game. It is ingeniously defended by sophists. At the Rochester meeting certain declamatory letters from anonymous correspondents proclaimed the *virtues* of fee-splitting. One writer passionately asserted that no law of ethics or of morals could hinder his doing as he pleased with his own hard-earned dollars. That is an old and a mighty contention—known even to the wits of the scriptural great men. Who, indeed, shall prevent we lest I do what I will with mine own? In some broad and easily comprehensible sense it is still today the contention of certain employers of labor. The labor unions maintain the reverse, while Congress and president applaud. But our fee-splitting colleague operates in a more restricted field. His activities—his buying of patients—are characterized by the scrupulous as "bribery." That is an ugly word, seriously to be considered by our business-like anonymous colleague. It is not the *surgeons* alone who offend in these matters. Earnest inquirers struggling amid the mysteries of business-like methods, are heard to whisper cautiously that *family doctors* are the more to blame. To the Philistine their profit is known as a "rake-off," and their subter-

ranean processes are stigmatized as "blackmail." These be soul-stirring phrases. Are the critics, indeed, "muckrakers" and "soreheads," as the business-like assert? But these are "personal" and "private" matters. Meantime, let it not be said that private hospitals and sanatoriums enter on the devious path. That easy descent to Avernus may not readily be retraced. The besmirched "institution" is besmirched beyond recall. Cæsar's wife must remain spotless from the world.

There are other tales—many of them pleasing tales, laden with which our faithful representative returns. Upon such tales later we may comment.

J. G. MUMFORD.

Home-Made Hospital Appliances.

In this number of THE MODERN HOSPITAL will be found articles on "Home-Made Appliances for Hospital Use." Some of the finest economies in present-day hospital practice are due to the invention of hospital workers themselves. It is not every one who has the knack or the mental attribute of invention, but a great many hospital people have it in a well-developed state. Hardly one of us ever goes into another hospital but he sees something new and instructive in the way of a home-made appliance of some sort for some purpose. Not always are these suggestions usable in their present form, but they very often contain hints for the solution of some problem if the observer has an inventive mind.

THE MODERN HOSPITAL wants to encourage the invention and use of home-made appliances, and to that end will be more than glad to publish photographs and descriptions of new ones every month. If all the hospital people will send in pictures and accounts of their own achievements in this line, every hospital will be profited thereby. Not all the things necessary to do all the work in hospitals have been invented yet, and the crude, improvised piece of mechanism of today may be "standard" apparatus tomorrow. That is how nearly all standard equipment began.

Let everybody contribute something to this most interesting and instructive department.

The Kansas City General Hospital.

We are wondering if the newspaper and other reports are true to the effect that the Kansas City General Hospital, that had given such promise during the past two years of becoming one of the really good municipal hospitals of this country, is to become again a part of the political spoils system of that city?

We are informed by the newspapers that Dr. R. E. Castelaw, who had retrieved the hospital from a position at the very depths of inefficiency, and brought it during his two years' incumbency abreast of the foremost of its kind, had been asked to resign, and that a successor had been appointed.

The people of Kansas City have expended $750,000 on their new hospital, and it had been an object of pride to them under Dr. Castelaw's administration. It cost last year $157,000 to operate the new and old hospitals, but more than 6,000 of the city's sick poor were cared for within its beneficent doors.

It is scarcely believable, in view of these facts, that any political administration would be willing to incur the ill will of a charitable public by consigning an institution with such splendid possibilities and such fine achievements, and in which the people had already shown so vital an interest, to its old position as a factor in the political spoils system.

Not so many years ago a public hospital could be operated as part of the spoils politics with impunity, but that time has gone by, and it is written large in the signs of the times that the people of Kansas City will not, without protest, allow their splendid hospital to again slip back into the mire.

More than one city administration, within the past few years, has paid the penalty of despoiling a public hospital dear to the people, with its life.

A Printer's Blunder.

An editorial was published in the June number of THE MODERN HOSPITAL commenting at some length on the paper, supposed to be published in the same number, by Miss Felter on "Operating Room Rules in the Royal Victoria Hospital." Unfortunately the paper itself, due to one of those inevitable shiftings in the make-up that will sometimes occur in the best printing offices, was left out. It is published in this number, and is recommended for careful study, especially by surgeons, interns, and surgical nurses. There is a great deal of meat and some things new in Miss Felter's rules.

Our July Cover Design.

Our cover design for this month is an illustration of Mount Zion Hospital, of San Francisco. As stated in the beginning of the article describing this hospital, the construction of the building was arranged to meet the twofold object of the institution—the maintenance of a free clinical department for the needy sick and a private department designed as an aid to defray the expenses of the former.

CURRENT HOSPITAL LITERATURE

Albert Allemann, M. D., Foreign Literature.
Army Medical Museum and Library, Office of the Surgeon-General U. S. Army.

Frank B. Martin, Domestic Literature.
Army Medical Museum and Library, Office of the Surgeon-General U. S. Army.

The Nursing of Children. Minnie Goodnow and Zula Pasley. Trained Nurse, New York, 1914, LII, 279.

In a series of papers the authors treat of communicable diseases and tell how the nurse may avoid contracting and carrying infection. Everything should be kept out of the mouth, and especial care exercised in the use of an individual drinking glass. The nurse should not kiss a patient, should keep out of doors as much as possible, and always sleep with an open window. The hands should be washed before and after eating, and always after handling the patient. Avoid the patient touching her face, or coughing and sneezing in it. Eat nothing a patient may wish to give, and in eating or drinking use only the nurses' dishes. Gowns or change of uniform should be put on in going into a ward, and always wash the hands on leaving it. Infectious diseases are contracted and carried by contact and not by air infection.

How Can the Construction Costs of Large Hospitals Be Reduced (Wie können die Baukosten der grossen Krankenanstalten herabgemindert werden)? H. Winterstein. Heilanstalt, Leipsic, 1914, IX, No. 6.

For small hospitals of from 12 to 50 beds the costs of construction amount at present to 2,000 to 3,000 marks per bed, for hospitals with 50 to 500 beds they reach as high as 6,000 marks ($1,500), while very large hospitals cost from 6,000 to 12,000 marks ($1,500 to $3,000). In general it may be said that the more expensive construction requires smaller sums in conducting the hospital. The principal reason of the increased cost lies in the general hospital plan. After 1870 there was a tendency to erect a great number of small buildings. The Virchow Hospital, for instance, consists of 57 small buildings; there is a house for every 35 beds. There is now a reaction against such an extreme decentralization. We can even reduce expenses by merely building two houses together, and still greater is the reduction if, instead of one and two-story structures, we erect buildings of several stories. The basements, too, can be put to a better use than is done at present. Instead of erecting separate buildings for kitchens, laundries, bath houses, etc., the basements could be used for such purposes.

The Out-Patient Department of the Henry Phipps Psychiatric Clinic. C. Macfie Campbell, M. D. Johns Hopkins Hospital Bulletin, May, 1914.

This is a paper read by Dr. Campbell, who is associate in psychiatry at Johns Hopkins Hospital, before the Baltimore City Medical Society. It was the author's intention to give a running story of the work of the dispensary in the new psychiatric department of Johns Hopkins since its opening, just a year ago. For purposes of a concrete story, the author took 50 consecutive cases treated last January out of the total of 543 cases treated during the year. "Of these fifty patients," writes the author, "13 were children, 7 were adults with marked constitutional mental defects, 16 presented symptoms either of a recognized type of psycho-neurosis or of a well-defined invalidism, 4 were cases of dementia precox, 5 had organic brain disorder, 1 had manic-depressive insanity, 1 patient was an epileptic, 2 were unclassified on the ground of insufficient data for diagnosis, chiefly on account of difficulty of language; in one case the symptoms did not go beyond the limits of a normal depression." The author goes into a most interesting and profitable analysis of these cases.

A Model Hospital. Australian Nurses' Jour., Sydney, 1914, XII, 51.

The new King's College Hospital at Denmark Hill possesses features that are especially adapted to the convenience and welfare of nurse and patient alike. Especially desirable features are the following: the large dining hall, with sliding panel into the serving room; the nurses' bed room, with wardrobe and drawers built into the wall; the washstand of marble slabs fitted into a corner, easily cleaned and open below, with walls covered with paripan; a bath room to every 8-bed room; a bell on every floor, rung from the matron's department on the ground floor; rows of hot pipes on which bed pans rest; hot-bottle tank outside each ward, heated by steam, the bottles kept permanently filled with hot water; fresh air, without drafts, from patients' windows opened top and bottom by pulling the handles, and even when closed allow fresh air between upper and lower sashes; windows revolve outside in for cleaning purposes; all corners rounded; the tops of bath fixtures of china, and all door handles, plates, etc., of aluminum. The matron has a private flat, equipped with automatic telephone connecting her with any department. These and other labor-saving devices will commend themselves.

Infant Mortality in the Philippine Islands. W. E. Musgrave. Philippine Jour. of Science, December, 1913.

This paper is a study from the department of medicine of the College of Medicine and Surgery in the University of the Philippines. The writer begins his paper with a statement that infant mortality in Manila is greater than it is in any other city of which we have records. He does not think that this fact is due to any single cause or to any special conditions in the country, but that it is due to artificial causes, some of which are prenatal and some post-natal; that heredity as to tuberculosis, syphilis, and other transmissible diseases plays a large part. He proposes to amend the situation at least, if not cure it, by attention to food for adults and children and milk foods for infants. In regard to this last he thinks that pasteurization entirely fails unless the after-care of the milk, especially in regard to temperature, is rigidly observed. The writer discusses the milk of the carabao, goat, and cow, as it is marketed in the streets of Manila. He says it is usually thirty-six hours old, is diluted with tap water or worse, and has been collected and transported in filthy receptacles after having been drawn from unclean animals by filthy persons; but for all these faults the writer is not at all impressed with the virtues of pasteurized milk, in which he thinks the multiplication of bacteria after pasteurization is so rapid that within a few hours the milk is almost or quite as dangerous as though the

process had not been employed. He is quite sure that the present cure for bad milk conditions, at least for the present, lies in perfect sterilization—that is, destruction of all animal and vegetable life by boiling.

Forty-Fourth Annual Report of the Inspector of Prisons and Public Charities upon the Hospitals and Charitable Institutions of the Province of Ontario for the Year 1913. 135 pp., 8vo, Toronto, 1914.

The province of Ontario has at present 89 public hospitals, including 12 sanatoriums for consumptives, 57 private hospitals, 37 houses of refuge, 33 orphanages, 3 homes for incurables, and 3 convalescent homes. Ontario has made a remarkable progress in this field during the last twenty years. While the province spent only $321,473 for hospital maintenance in 1893, the expenses amounted to $1,971,577 in 1913. This is a splendid testimony of the public spirit and the philanthropy of the people of Ontario, and not without reason Sir William Osler, in his address before the British Hospital Association, referred to the hospitals of Ontario as model institutions. Undoubtedly one of the finest hospitals on the western continent is the great Toronto General Hospital, which has just been completed at an expense of $3,500,000, and which has room for 700 patients. It is of general interest to learn that the report calls attention to the fact that a large number of undesirable and unsuitable immigrants have become a public charge on the hospitals and public charities of Canada. As the number of this class of immigrants is relatively much greater in the United States, it would be interesting to know to what extent the public hospitals and charities are affected by this class of immigrants.

Hospitals and Medical Instruction in Shanghai (Les hopitaux et l' enseignement de la médecine a Shanghai). Paris Médical, 1914, IV, No. 16, Suppl.

Shanghai, with its fine hotels, its splendid palaces, its luxury, looks like a European city transplanted into the Orient. It has over 800,000 inhabitants, among whom there are about 15,000 Americans and Europeans. The city owes its marvelous progress to the activities of the foreign residents. Shanghai has 17 hospitals, all established and maintained by Americans and Europeans. From 5,000 to 6,000 patients are cared for every year in these hospitals. The author describes only one of these institutions, Saint Mary's Hospital, which was established six years ago by French missionaries. It consists of three rows of isolated pavilions surrounded by extensive gardens. Both European and Chinese patients are admitted. The patients are divided into three classes. Those of the first class, which consist almost entirely of Europeans, have single rooms. Patients of the second class are placed in rooms with two or three beds, and those of the third class, who pay only 50 centimes (10 cents) per day, are placed in rooms with 5 or 6 beds.

The Community's Right to Health Protection. A. H. Gladden, M. D. A paper read before the Health Conference of Local and State Officers, New Orleans, April 20, 1914, and published in the New Orleans Med. and Surg. Jour., May, 1914.

Dr. Gladden thinks the community has a right to health protection because the greatest asset to any community is the health of its citizens. He thinks that local boards of health—parochial, municipal, and state—are all well enough in their way, and that, working hand in hand, they can do some good even as their affairs are now conducted; but he thinks that "if such men are employed at a salary commensurate with the service expected and demanded, and they will devote their entire time to matters pertaining to the public health, the community will have made the very best step toward the betterment of health conditions. He thinks the public should be protected against quacks, against the sale of "cure-all" patent medicines; he thinks that a board created and conducted on a basis of payment of salaries to the officers would do great good in preventing epidemics of typhoid fever through bad drinking water, and that it would be an effective factor in maintaining quarantine regulations; that it could go far to prevent interstate "common carriers" from being a menace to the health of the traveling public; that it could be a real influence in the enactment of reform legislation in relation to health matters, that it could effect local sanitary legislation, that it could, by careful analysis, unearth causes of local epidemics and put the machinery into motion for their suppression, and that it could eventually greatly reduce the death rate.

A Public Welfare Department—Its Proper Relation to the Hospital Under the New Charter. Otto P. Geyer, M. D. Cincinnati Lancet-Clinic, April 25 and May 2.

Dr. Geyer arraigns the community in which he lives, and indirectly every other community in the country, on the score of its "gambling with human life." He presents a formidable list of the things that the community has failed to do for its dependent members. "Thirty-five thousand of our fellow citizens," he says, "are more or less dependent yearly (this is in Cincinnati alone); 8,000 of them require free medical care at the city hospital; 2,860 children were deserted in one year; 1,490 children were officially before the juvenile court in 1912; collectively the 3,000 or more men committed to the workhouse in 1913 wasted approximately four hundred years of their existence behind the bars of that institution. This waste of their opportunity and their time cost the city $30,000 alone in the community's workhouse. One hesitates to calculate the economic waste to the city in loss of their productive labor, to say nothing of the misery occasioned their families. Eight thousand infirm, aged, and cripples daily required the city's charity at the infirmary." Then the writer proceeds to suggest a series of remedies, which he sums up and makes into concrete form in the shape of an organized body whose component parts shall contribute toward a common service to these various classes of dependents.

The Nutritive Significance of Different Kinds of Food Stuffs. Lafayette B. Mendel, Ph. D. New York Med. Record, April 25.

Prof. Mendel's paper was read before the New York Academy of Medicine in March, and was part of a symposium on foods, in which Dr. Graham Lusk was another participant. Dr. Mendel's paper goes into the question of primitive foods by people of the dark ages, and leads, step by step, down the ages, showing how various foods came into use and the evolution through which they passed to the present methods of their preparation. The writer then takes up different kinds of food and discusses each, by classes, in a most interesting and profitable manner. For instance, in regard to the banana, he says: "In the undervalued and maligned banana we have an example of what ignorance and improper habits of eating can do to detract from the deserved popularity of a wholesome food. Bruised, damaged, and exposed to decay by improper methods of marketing and serving, though nature furnishes the banana in a sterile package; eaten before it is ripe, because the green fruit appears more attractive to some; insufficiently masticated by many, though rarely by untutored children; this delicious fruit has acquired an

unmerited reputation as an indigestible offender. The real culprit is man, not the banana; and why he should disdain a raw potato or a green apple, yet attempt the alimentary conquest of an unripened, indigestible, starchy banana instead of the duly ripened, sugary fruit, and then expect comfort, is a mystery." The writer discusses sugars, cheese, milks, the mushrooms, fruits, and a wide variety of other commodities which make up the daily fare of civilized people. The paper is a most entertaining and instructive one.

Diseases Liable to Be Met With in Mexico and the General Methods of Combating Them. Major Weston P. Chamberlain, Medical Corps U. S. Army. Jour. Roy. Serv. Inst., New York, 1914, LIV, No. 189.

In his recent paper before the officers of the Fifth Infantry, Major Chamberlain claims in a campaign from Vera Cruz to Mexico City practically all factors harmful to health known to temperate and torrid zones are liable to be encountered. There are three different climatic zones in Mexico—the warm, tierra caliente; temperate, tierra templada; and tierra fria, or cold zone. The tierra caliente, or warm, covers a territory from sea level to an altitude of 3,000 feet, best exemplified by a low, hot, damp, marshy, and unwholesome region along the gulf coast. In this zone is Vera Cruz. The temperature varies from 77° F. to 82° F., seldom falling below 60° F. and often rising to 100° F. Malaria, dysentery, and yellow fever prevail. Typhoid is a continued fever there, lasting on an average three weeks, and in about 50 percent of the cases there exists diarrhea.

Until recently the existence of typhoid in the tropics was thought rare or unknown, but investigations of the last ten or fifteen years in India, Panama, and the Philippines have proven the disease widely prevalent among both whites and natives in hot countries. It becomes one of the most serious diseases encountered by an army operating in the tropics. Not even a previous attack will render a person immune. While the use of the antityphoid inoculation has greatly reduced the number of cases in our army and navy, it is not to be considered an infallible protection, and should not lead to the neglect of well-known sanitary precautions that help check the development and spread of typhoid fever. The writer specifies that this observance is all the more important because these same sanitary precautions, which are useful against typhoid, are equally efficacious in preventing the development of epidemics of dysentery, diarrhea, and cholera, three very deadly enemies to armies.

Dysenteries are frequent, especially the second type, known also as amebic dysentery, because it is produced by an ameba, which, while not a bacterium, is a protozoan, a low form of animal life; and this disease is also known as "chronic dysentery." All the diseases referred to—namely typhoid fever, dysentery, diarrhea, cholera, and Malta fever—belong to a class the causative agent of which gains entry to the system through the mouth. Another class of diseases to command attention are those contracted by the bites of insects, the most common and important of which is malaria. Dengue or break-bone fever, hookworm infection—often contracted by bathing or wading in muddy, stagnant water—dhobie itch, and plague also fall under this class, to guard against which the most rigid sanitary rules should be observed. Major Chamberlain lays special stress on the venereal diseases, leprosy, yaws, sore eyes, and tropical ulcers that exist among a low order of the people of Mexico, an association with whom our soldiers would do well to avoid. He advises good care of the soldiers' feet, and prevention of ringworm, ground or toe itch, and tetter, a well-known foot disease. While nostalgia, or homesickness, comes to the unfortunate soldier who indulges in dissipation and forms association among low, immoral classes, he believes if strict attention is paid to the laws of hygiene, and sanitary regulations are observed, a normal mental attitude will prevail. Accounts heretofore given along these lines, the writer thinks, have been greatly exaggerated, and the effects of tropical climates on the nervous system do not differ from the effect on troops within the continental limits of the United States. The issuing of necessary sanitary instructions he does not consider sufficient. Every individual, from the highest to the lowest, must see that such instructions are carried out to the letter by himself and by others. That attention to the rules of advanced tropical sanitation can protect the health of large bodies of men is shown by the remarkable success that has attended the efforts of military authorities in Panama, which only a few years ago was considered to be the graveyard of the white man.

A Novel Combined High-Pressure Sterilizer and Hot-Water Fountain. Roy Huchnell. Australian Med. Jour., Melbourne, 1914, III, 1511.

Impressed with the inconvenience, waste, and comparative inefficiency of most sterilizers in use at private and many public hospitals, the writer has invented a sterilizer of two cylinders of sheet copper, nickeled in and out, with flanged brazed joints, capable of withstanding high pressure. The bottom of one is level with the top of the other, so that water can flow by gravity, and they are carried on white stone enameled supports as all other such vessels. The higher tank is fitted with a steam pressure gauge and safety valve, both tanks possessing water level gauges and draw-off taps. Above them is an air compensation pipe with cotton wool air filter, the only ingress point for air, which allows water to flow over when required. A big Fletcher burner, with a pilot, is placed under the cylinder and burns about 30 feet of gas per hour. In his apparatus this cylinder has a capacity of 8 gallons. A steam pipe leads to two coiled worms contained in two vessels on the left—the one perforated, with trays and baskets; the other simply a big shell. Into the former are put the instruments, sutures and dressings, basins, swabs, towels, aprons, and caps. On the wall is a Berkfeld filter, all water flowing into the upper tank from the main passing through this. Pipes lead to wash basins, providing hot and cold water for handwashing. The inventor claims for his sterilizer absolute safety, to be blown off at six pounds above atmospheric pressure, though the boiler has been tested to 20 pounds to the square inch, giving a half hour's exposure to 230° F. It has been in use for a year, and has given clinical tests of 100 percent of recoveries in major surgery. The cost of the installation is about $300. The article is illustrated by a splendid diagram.

General Memorial Hospital for Treatment of Cancer and Allied Diseases.

The Medical Record notes the gift of nearly $500,000 to the General Memorial Hospital from Dr. James Douglas, the conditions being that the entire medical as well as research staff shall be under the control of the medical department of Cornell University in New York City, thus insuring close cooperation between clinical and laboratory investigation of the cancer problem. At the laying of the corner stone of the institute, May 17, 1884, Dr. Wm. H. Draper stated "the highest object with which a hospital can be founded is not simply to provide for those whose means are inadequate to command them the benefits of the

best medical and surgical skill, and the best nursing; the higher purpose is to give the best possible opportunity for the scientific investigation of the causes and the treatment of a disease which has thus far baffled human insight and human skill." Other munificent gifts for this institution have come from Mrs. Huntington, who in 1902 contributed $100,000, to be known as the Collis P. Huntington Fund, to be invested and kept invested, the income only to be used. The general plan is similar to that of the Middlesex Hospital, London. The hospital now has a moderate supply of high-grade radium, and a larger amount of low-grade from which the emanation is used. A further supply up to 3 grams is expected from the Colorado mines of Dr. Douglas.

A Children's Hospital (Ospedale di bimbi). Amy A. Bernardy. Rivista ospedaliera, Roma, 1914, V, No. 3.

In a letter from America the author gives a pleasing description of a children's ward in a New York Hospital. All children are under 5 years old. She is struck with the neatness of the little tots—the girls being dressed in blue, the boys in pink. All nationalities of the great cosmopolitan city are here represented—the dark-eyed Italian boy, the blond German, the Greek, the precocious Hebrew, the talkative Irish children. Many of the little ones are not really sick—they are merely nervous and overexcited from the noise, stir, and turbulent life of the great American city. They want only rest and sleep, much sleep, which they get here to their fullest needs.

The Hospitalization of the Tuberculous (Sull' ospitiliggazione dei tubercolosi). Arturo Campani. Arch. di scienza ospedaliera, Milano, 1914, IV, No. 2.

In Italy 50,000 persons die annually from pulmonary tuberculosis, and the number of tuberculous patients is continually increasing. So far little has been done for the prevention of tuberculosis, because there is a widespread notion among the people that all human efforts are vain in combating this terrible scourge. The author points to Germany, England, and the United States, where great results have been accomplished by the establishment of special tuberculosis hospitals. In Germany there exist 122 sanatoriums for the common people, besides many pay institutions for the well-to-do. As a result of the energetic antituberculosis work, the mortality of tuberculosis in Germany from 1875 to the present time has been reduced by half. Not only was a large percentage of tuberculous patients entirely cured, but the very great danger of infecting other people has been removed. The author advises his countrymen to abandon the present practice of maintaining tuberculosis wards in general hospitals, where the mortality is great, and where frequently other patients of the hospital are infected, and to establish sanatoriums and special tuberculosis hospitals. Such institutions alone are favorable to a cure and are a guarantee against the spread of the disease.

The Hopital de Enfants-Malades (1802-1913). Dr. P. Lereboullet. Paris médical, 1913-14, IV, No. 1 supplement.

The Hopital des Enfants-Malades in Paris was the first hospital established for the treatment of children's diseases. In 1802 the General Board of Hospitals decided that the former orphans' home on the Rue de Sèvres should be exclusively devoted to the treatment of sick children under 15 years of age. Both sexes were admitted from the beginning. Patients who were supposed to have a contagious disease were isolated from the other children. In 1820 the hospital was greatly enlarged. So successful was the hospital in the treatment of sick children that travelers from all countries who visited Paris never omitted to see this institution, which, by its neatness, cleanliness, and orderliness made a deep impression on all visitors. In 1837 Dr. Bilgrain, one of the hospital physicians, donated 150,000 francs for two new pavilions. In spite of a number of new additions made in the 50s, the hospital was overcrowded and the mortality from contagious diseases was extremely high. In the 80s a great improvement took place. The hospital was greatly enlarged, and special isolation wards were established for the various infectious diseases.

This hospital plays a great part in the history of French medicine. Some of the greatest names in French medicine are numbered among those who devoted their skill to the treatment of the little patients of this hospital, such names as Baudelocque, Tessier, Grancher, Marfan, Hutinel, Lannelongue, Broca, Kirmisson, Terrien, and many others.

State Care and Training of the Feeble-Minded in Maine. Carl J. Hedin, M. D., Superintendent Maine School for Feeble-Minded at West Pawnal. Maine Med. Jour., June, 1914.

The children in the Pawnal school are graded by mentality and placed in classes fitted to their ability to receive instruction. Only the lowest forms of idiots are unable to perform useful manual labor. The boys learn cobbling, carpentry, painting, cane seating, weaving, and basketry. The girls learn knitting, sewing, rug making, embroidery, weaving, lace making, and crocheting. There are school classes for all the higher grades, and industrial classes for all. Nearly all the boys help on the large farm, and eventually become nearly or even quite self-supporting. There are 256 inmates in the present school, located on a 1,200-acre farm, but the writer believes there are five times that number in the state uncared for. The future must manage this problem, especially the care of the feeble-minded female, who, statistics show, is twice as prolific as the normal woman. Moreover, statistics show that feeble-mindedness comes usually from the mother. As for the solution of the problem, the writer is quite sure it lies in rigid segregation and state care, since public sentiment is so strongly against sterilization of the unfit.

The Open-Air Building a New System of Hospital Construction (das Freilufthaus ein neues Bausystem fur Krankenanstalten). Dr. D. Sarason. 122 pp. 8vo, München, J. F. Lehmann, 1914. Price, $1.25.

Already in 1902, Sarason exhibited models of a new system of hospital construction at the International Tuberculosis Congress at Berlin. But the system, which he called the terrace system, was then still imperfect and not worked out in its details. Since then the author has perfected his plans, and a hospital based on his views has already been constructed in England, the King Edward Sanatorium in Midhurst. Sarason finds that a most important therapeutic means, the open-air treatment, has not been given due consideration in modern hospital construction. He expresses himself against the extreme decentralization in modern hospital construction, and thinks a compromise between the old centralized corridor structures and the pavilion system should be made. He advises the erection of three- and four-story buildings, and points to America, where five and more stories show no disadvantages in the cure of diseases. But to make a perfect open-air treatment possible, Sarason proposes the construction of open-air terrace buildings (Freiluft-Terrassenhäuser). The novelty of this construction consists in the fact that each story stands 1½ meters back of the one below, while the terrace thus formed is widened by pro-

jecting 1 meter beyond the lower story. The whole width of the terrace is therefore 2½ meters (8 feet). Every room is provided with such a terrace balcony (Terrassenbalkon), on which the patients can enjoy the fresh air at their pleasure and to which the beds can be rolled out in favorable weather.

In the second part of the book Dr. Nussbaum considers the questions of arrangements, furnishings, heating, ventilation, etc., of such a hospital, and Architect Becker gives his views on the construction and costs of such a terrace building. In another article Dr. Bardswell, director of the King Edward Sanatorium in Midhurst, reports on the favorable results which were obtained at the Midhurst Sanatorium built on Sarason's plans. The book is supplied with numerous plans and diagrams illustrating this new system of hospital construction.

Expensive Mospital Construction and the Size of Hospitals (Der hohe Kostenaufwand fur Krankenhaus-neubauten und die Grösse der Krankenanstalten). Ztschr. f. Krankenanstalten, Leipsic, 1914, X, No. 20.

The question of expensive hospital construction was lately discussed in the Prussian Parliament. It was stated that in Berlin and vicinity a hospital costs now 12,000 marks ($3,000) per bed, while in former times the expenses were only 3,000 to 4,000 marks. The minister of the interior admitted that too much money was spent in modern hospital construction, but stated that it was not the medical officers, but the architects and the various city governments of Prussia that demanded such expensive and luxurious structures. The author thinks that the complaint about too expensive hospital construction is justified. He is of opinion that this increasing luxury will finally work to the detriment of the hospitals and the patients. People with plenty of money may go to expensive sanatoriums and private hospitals, but the municipal hospitals must, above all, serve the inhabitants who live in moderate circumstances and cannot spend large sums for hospital treatment. The author thinks that very large hospitals, hospitals of 1,000 to 2,000 beds, are not advantageous. Such institutions require comparatively a much larger personnel than is necessary in smaller hospitals. He quotes Architect Schachner, of Munich, who insists that no hospital ought to contain more than 600 beds, and that such a hospital is sufficient for a population of 120-000 inhabitants.

Employment of Female Nurses in Divisions for Male Venereal Patients—Ordinance of the Prussian Minister of the Interior (Beschäftigung von weiblichen Krankenpflegepersonen auf Krankenhausabteilungen für männliche Geschlechtskranke—Erlass des Preussischen Ministers des Innern). Heilanstalt, Leipsic, 1914, IX, No. 8.

Learning that in a few hospitals female nurses are still employed to tend to male venereal patients, the Prussian minister of the interior, by an ordinance of February 11, 1914, requests all hospitals to discontinue this practice. He demands that not only should female nurses not be required to assist in the treatment of such patients, but that wherever possible these nurses should be entirely withdrawn from wards for male venereal patients.

Typhoid Baccillus Carriers and the Public Hospitals (I portatori di bacilli e gli espedali publici). Dr. A. Caccini. Rivista ospedaliera, Roma, 1914, IV, No. 7.

In some European countries special laws have been passed concerning typhoid bacilli carriers. In German hospitals no convalescent from typhoid fever is discharged before a bacteriological examination of the feces and the urine has proved him to be free from typhoid bacilli. In England, if a patient is after three months' observation not found free from bacilli, he is either retained at the hospital, or, if he refuses to remain, he is discharged, but is then kept under constant surveillance of the health officer of the district in which he resides. In America this question has attracted much attention. Dr. Meakin in Montreal advises the hospitals to retain all bacilli carriers until they are completely sterilized through proper treatment. Dr. Barunau, superintendent of the New York hospitals, requires a thorough examination of the urine and feces of typhoid reconvalescents. From 1911 to the present time 12.6 percent of all typhoid reconvalescents were found to be bacilli carriers. All such patients were treated at the hospitals until they were free from bacilli.

The Question of "Increased Construction Costs of Our Modern Hospitals" (Zur Frage der "zunehmenden Verteuerung unserer modernen Krankenanstalten"). F. Ruppel. Ztschr. f. Krankenanstalten, Leipsic, 1914, X, No. 16.

The article of Dr. Khrone in the Hospital Yearbook on the increased cost of modern hospital construction has caused a great stir in Germany. At the solicitation of the mayor of Cologne, a convention of delegates from all the large cities was held at Berlin, March 27, to consider this question. Twenty-seven delegates representing the cities of Cologne, Berlin, charlottenburg, Schöneberg, Hamburg, Bremen, Dresden, Leipsic, Munich, Frankfort, and Düsseldorf were present. After mature deliberation, the convention came to the conclusion that Dr. Krohne's claim that the cities are extravagant in spending money on new hospitals are entirely unfounded. The convention selected a committee, consisting of practical builders, medical men, and administrative officers, to draw up a detailed report on modern hospital construction in Germany, and to put this question on a thoroughly scientific basis.

Industrial Insurance—Medical Examination of Employees and Prevention of Sickness Its Proper Foundation. Surgeon J. W. Schereschewsky, U. S. P. H. S. Weekly Bulletin, Public Health Service, June 5, 1914.

Prevention of disease is a prerequisite to the lowering of insurance costs, the writer thinks, and frequent medical examinations of employees is necessary in order that preventive measures may be effective. It is not sufficient that hygienic and sanitary conditions in workshops shall be assured, since the home environment is often responsible for illness and inefficiency; the necessity for visiting nurse work and social service activities follows until the problem of industrial insurance becomes inextricably connected with the broadest health measures, including the work of community health officers. The following general conclusions of the author are made: 1, industrial sickness insurance is an economic necessity in modern social evolution; 2, the basis on which industrial insurance should rest is the prevention of illness and physical disabilities; 3, frequent periodic physical examinations of workers constitute the logical means by which defects and diseases can be detected in their incipiency; 4, the scope of such examinations should be extended to include home as well as factory conditions; 5, Industrial insurance based on preventive measures should redound greatly to the benefit of society (a) by reducing the annual loss of time through illness, (b) by establishing hygienic standards, (c) by establishing minimum hygienic standards for industries, (d) by favoring the enactment of uniform industrial legislation, (e) by increasing the efficiency of local health authorities; 6, the cost of carrying industrial insurance based on preventive principles should be less than that of present systems.

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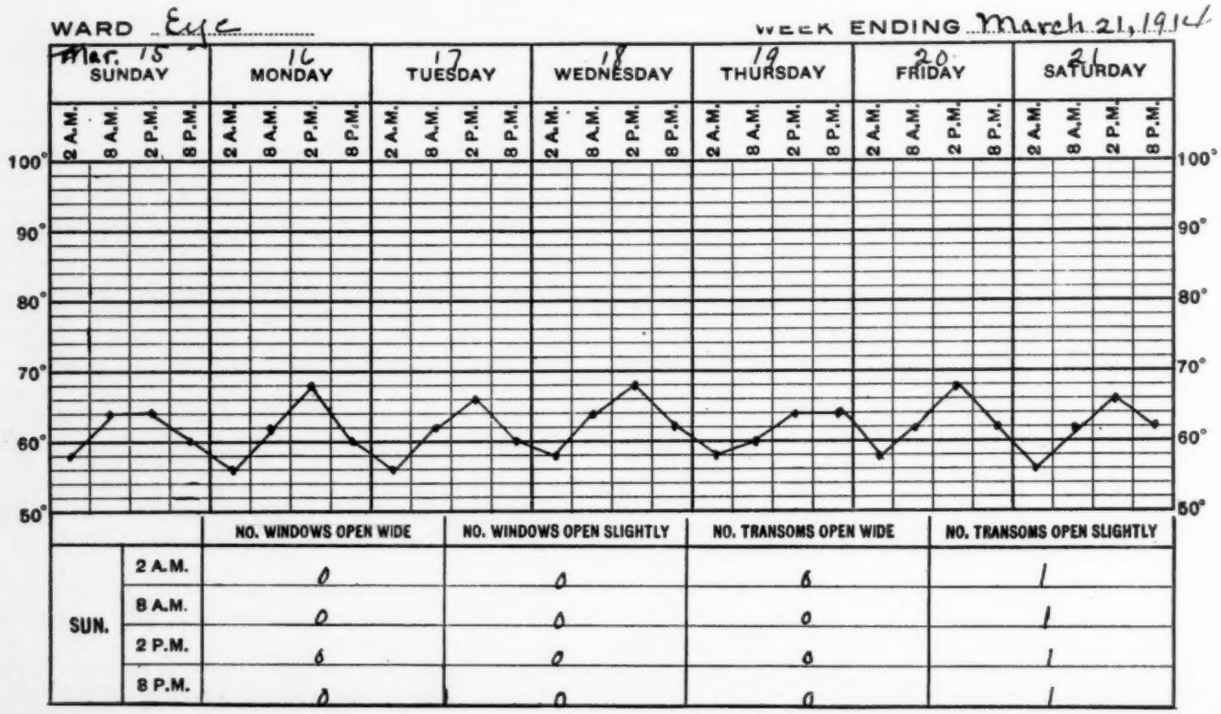
CHART YOUR ROOM TEMPERATURES.

Mt. Sinai Hospital, New York, Knows What Its Mechanical Ventilation System Is Doing For It.

Mt. Sinai Hospital, New York, is doing what every hospital should do, but which practically none are doing. There is a standardized thermometer in every room where patients live, and a temperature chart of the room is kept by a nurse for each six hours of the twenty-four, with added memoranda of the conditions under which the temperature was maintained—that is, whether there were windows or transoms open, and, if so, how many.

The accompanying illustration shows one week's record in a 4-bed surgical ward, with a sample of the several hour markings. If every hospital that has a mechanical system of ventilation at work would adopt some such system as this, it would not take very long for superintendents to find out just what the system was doing for them. The data would be even completer if a hygrometric chart could also be kept to show the relative humidity of the apartment. Temperature may mean one thing at one unit of humidity, and a vastly different thing at another unit. It means very much whether the air is wet or dry.

WARD TEMPERATURES.


WARD Eye
WEEK ENDING March 21, 1914
Mar. 15 SUNDAY
16 MONDAY
17 TUESDAY
18 WEDNESDAY
19 THURSDAY
20 FRIDAY
21 SATURDAY
2 A.M. 8 A.M. 2 P.M. 8 P.M.
100° 90° 80° 70° 60° 50°
NO. WINDOWS OPEN WIDE
NO. WINDOWS OPEN SLIGHTLY
NO. TRANSOMS OPEN WIDE
NO. TRANSOMS OPEN SLIGHTLY
SUN. 2 A.M. 0 0 6 1
SUN. 8 A.M. 0 0 0 1
SUN. 2 P.M. 6 0 0 1
SUN. 8 P.M. 0 0 0 1

HOME-MADE HOSPITAL APPLIANCES

Devices Improvised in Institutions to Lighten the Work or to Make It More Efficient.

A few weeks ago THE MODERN HOSPITAL called on hospital superintendents and heads of hospital departments to send in for publication photographs and descriptions of home-made appliances which they had found efficient to perform certain useful functions, and for which there seemed to be no substitutes on the market.

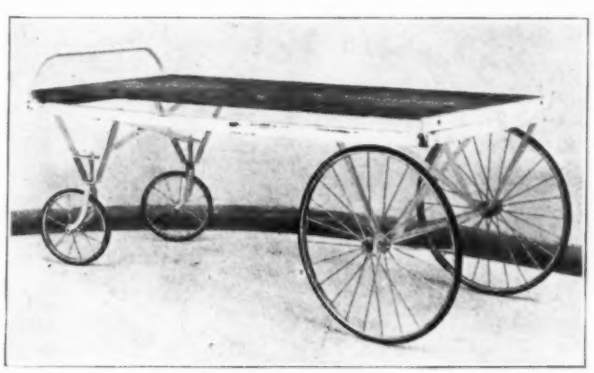
Nearly all the standard hospital equipment began in the hospitals as home-made appliances, devised by ingenious workers to meet individual problems. If a device seemed to do the work well, it was copied in another hospital, and then another, until the commercial folks saw that it was worth while. Little mechanical improvements were made and the article became "standardized."

The response for information about what the hospitals had in the way of such appliances was immediate and hearty, as indicating a spirit of cooperation at once promising and good to see. The first installment of these stories of achievement follows:

Wheel Bed—Lakeside Hospital, Cleveland.

DR. A. R. WARNER, SUPERINTENDENT.

We receive more inquiries about our wheel beds than any other article in use at Lakeside. The patients greatly enjoy these beds, and they are convenient, but they are a luxury. The appearance and general construction of the bed is shown in the accompanying cut. The 24-inch stationary rubber-tire wheels and the 12-inch swivel wheels are standard, and can be purchased on the open market. We make the frames in our shops and the springs are put



Wheel bed.

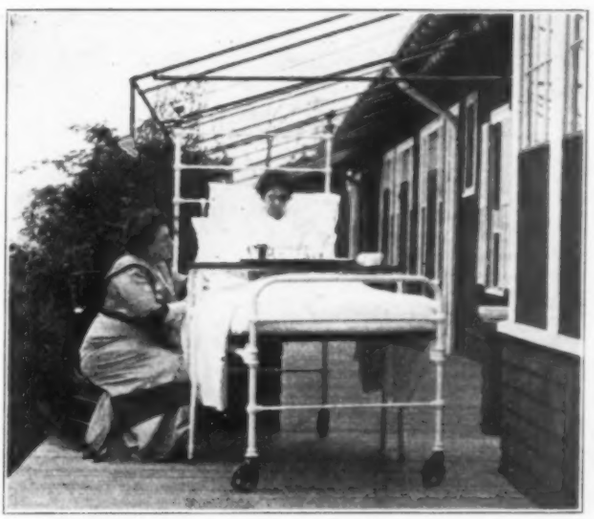
on by a local woven-wire spring manufacturer. The cost to make and assemble is about $25 each.

The advantages of this bed are, first, ease and comfort in moving patients. They are the same height as the ward beds. The wheel bed is run to the side of the ward bed, and two nurses can easily place patient, mattress, and other bed material onto the wheel bed without disturbing the patient. One nurse can then easily take the patient from one place to another, and patient and mattress is as easily transferred to another ward bed. The second advantage is the freedom it gives bed patients. Patients unable to sit up are taken by their special nurses to the sun rooms, to the porches, or into the hospital corridors, giving them diversion from the monotony of isolation in their rooms. Ward patients are often kept on the porches, out of doors, all the time on these wheel beds, and for meals, dressings, or care, one nurse or orderly can easily run them back into the ward. Each ward is provided with a certain number of these wheel beds, and they are in constant use.

Over-Bed Table—New England Baptist Hospital.

MISS EMMA A. ANDERSON, SUPERINTENDENT.

This over-bed table is in many respects superior to the ordinary bedside table. It is absolutely firm, never sags or gets off its base, and moves easily on casters. By pushing it down to the foot of the bed when not in use, it takes up no extra space. When pushed down over the foot of the bed, it makes an extra shelf for books or flowers; especially pretty for flowers, because the patient can always see them. It has ample room, not only for the patient's



Over-bed table.

tray, but extra dishes and dish covers may be placed at one side, thus avoiding crowding the tray. It makes an admirable writing desk, and may be used also as a table for solitaire or for picture puzzles. It is very serviceable for the surgeon when doing a dressing, as the table may be pushed up or down over the bed, and the dressings and utensils spread out conveniently for use. In fact, more uses can be found for this table than one could readily enumerate, and our doctors and patients are universally pleased with it.

Tin Can Crusher—Presbyterian Hospital, Chicago.

MR. ASA BACON, SUPERINTENDENT.

Tin cans that accumulate in the hospital are not only an item of expense to dispose of, but take up a great deal of valuable space. I have found a way to put two barrels of tin cans into one, or to make one wagon load instead of two, thus cutting down my cartage bills one-half, besides saving valuable space. The can smasher is very easily made. Take a half-barrel, saw it in two, and fill with concrete. After it dries cut the hoops and remove the barrel. This gives a round concrete block, as shown in the illus-

tration. A square block can be made by using a box instead of a barrel.

Take a piece of 2½-inch steam pipe. Cut it 2 feet 6 inches long. This makes a good smasher. Lay a can on the

Tin can crusher—1, concrete block; 2, can smasher; 3, garbage burner.

block and hit it once or twice with the smasher, and it becomes flat instead of round. It is only a moment's work of the janitor to do this, and one may readily see the immense saving it will make in cartage and storage.

The hospital building being erected at Hastings, Neb., by H. W. Lanning in memory of his daughter, Mary T. Lanning, whose name it is to bear, promises to be a handsome structure as well as a modern one. It is T-shaped and two stories high. The exterior is executed in white Carthage limestone, cream colored vitrified brick, and white terra-cotta. Emphasizing the classic appearance of the front is a two-story portico, the pediment of which is supported by six large Corinthian columns. Some of the noteworthy features of the building are an operating room, the floor of which slopes to the center, where there is a drain, making it possible to cleanse the floor in a few moments with a hose; a locker room with a steel locker for every bed in the hospital; floors of material that deadens sound and will not stain permanently; an automatic elevator which will not move until all the doors to the shaft are closed; and a flashlight signal system.

As shown by figures quoted in *The Hospital*, London, May, 1914, since the establishment of the King's hospital fund seventeen years ago over 1,750,000 pounds sterling have been raised and distributed among hospitals, convalescent homes, and sanatoriums for consumptives. The editor claims that institutions which do not maintain average contributions from legacies must attribute the diminished supply to faulty methods or lack of up-to-date, competent administration and adequate driving force; that a great voluntary hospital or kindred institution of today cannot thrive and extend its work unless it claims the service of at least one good man or woman of marked ability and energy, devoted to advancing its interests; that a most remarkable example of this type is Sir J. Wolfe Barry in his connection with the Westminster Hospital, which has to face the responsibility of finding a new site, creating a modern, up-to-date hospital, with perfect medical school equipment, to take its place in the medical and surgical work of London.

Mercy Hospital, of Altoona, Pa., held a public reception June 4th to celebrate improvements that have been made at that institution since the first of the year. An entire new floor has been added, giving the building three stories above the basement. The new third floor contains nine private rooms, x-ray room, laboratory, with the necessary supply rooms, office, and laboratories. The entire old part of the building has been renovated and improved, and the capacity of the hospital is now increased to 40 beds. A training school of ten pupil nurses is conducted, and, in view of the fact that the hospital has been in existence only four years, there seems to have been unusual activity on the part of the management. Miss Laura M. Hamer, a graduate of the University of Pennsylvania, is the superintendent, and Miss Grace Laird, of the German Hospital, Philadelphia, the head nurse.

NEW INSTRUMENTS *and* APPLIANCES

Vincenz Mueller, Technical Editor.
Geo. W. Wallerich, Associate Editor.

The Coolidge X-Ray Tube.

A great deal of interest is being taken in the new x-ray tube recently described and demonstrated by W. D. Coolidge, D. S., Ph. D. Dr. Coolidge is engaged in research work at the experimental laboratory of the General Electric Company at Schenectady, N. Y. His achievements in producing ductile tungsten are well known, and it is through his method that the present tungsten target

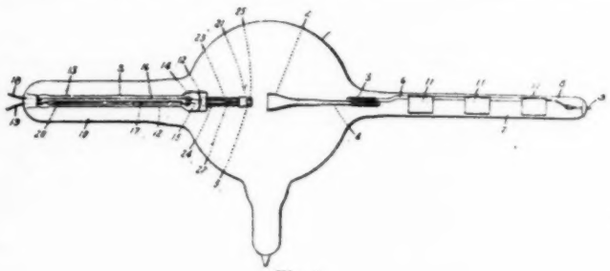


Fig. 1.

tube, which is very generally used for heavy duty service, became possible.

The new tube bearing his name differs quite materially in principle from that of any other preceding type, and has certain advantages which it seems will make roentgen technic more simple in the future. It has been claimed that, due to the presence of gases which are not liberated in the process of manufacture, uniformity in results is produced when tubes are used for roentgenograms or thera-

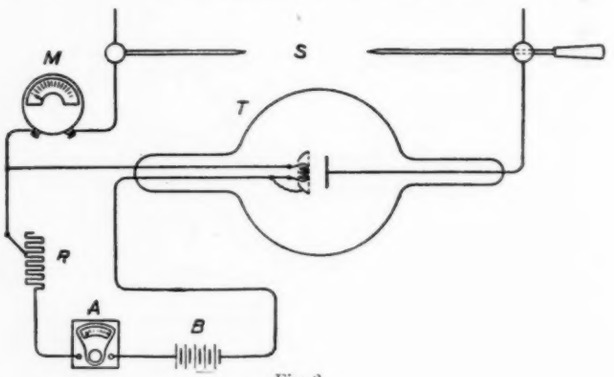


Fig. 2.

peutic purposes. The Coolidge tube permits of a state of vacuum in the original pumping which is far beyond that ever before attempted in tube manufacture; the gas pressure is only a few hundredths of a micron, whereas in the ordinary tube it is several microns.

The cathode is a tungsten filament, wound in spiral form No. 25 (Fig. 1). This filament is electrically welded to heavy molybdenum wires 14 and 15 (Fig. 1). To the

other extremities are welded two copper wires 16 and 17, these in turn being welded to platinum wires 18 and 19. The outer end of the glass supporting tube 13 is of German glass, the same as the bulb, but interposed is a series of different kinds of glass which allow for the difference of expansion.

The tungsten filament which forms the cathode is heated by a current from a small storage battery. An ammeter and an adjustable rheostat in the circuit permit of the regulation of the heating current, so that the temperature may be regulated from approximately 1,890 degrees to 2,340 degrees.

The anode or target fills a double purpose in that it also serves as the anticathode. It consists of a single piece of tungsten weighing 100 grams and the diameter is $1^9/_{10}$ centimeters. The tube is connected as shown in Fig. 2, T being the x-ray tube, B the storage battery, A the ammeter, R an adjustable rheostat. This rheostat can be placed at any convenient point, so that exposure of the operator to the rays is unnecessary. S is an adjustable spark gap and M is the milliamperemeter.

Unless the filament of the tube is heated, the tube shows no current flowing in either direction, even with a voltage of 100,000. The current can pass in but one direction—namely, from the hot filament—as the cathode. The current is therefore rectified by the tube, which seems to indicate that in the near future, if the Coolidge tube proves successful, roentgen apparatus can be greatly simplified, since there is a possibility that nothing more will be required in the way of apparatus than a step-up transformer, the output of which can be regulated. It will be noted that by adjusting the storage battery rheostat so as to pass a given amount of current, the filament is heated to a certain degree, and the rays which are generated are in direct proportion, as the temperature of the filament is raised or lowered.

In some of the experimental work in developing the tube, x-rays were generated for as long as fifty minutes without the least variation in penetration. Again, it is stated that the tube can be adjusted for treatment purposes, and, if necessary, immediately used for heavy radiographic purposes.

Just what the ultimate outcome of this new tube will be as regards practicability is a question. It will require careful technic on the part of the operator, especially when used for therapeutic purposes, due to the heavy output of x-rays.

So far as we can learn, comparatively few of the tubes have been made, and these are in the hands of experts, who are testing them, but it is to be hoped that they will soon be available if they have all of the advantages which are now apparent.

Modern Instruments for Applying Heat to Inhibit and Destroy Inoperable Carcinoma.

BY THE TECHNIC DEVELOPED BY DR. J. F. PERCY, GALESBURG, ILL.

During the last few years the subject of carcinoma of the uterus has been widely discussed at medical and surgical meetings, as well as by the medical press. In consequence of this extensive publicity, various methods for treatment of the disease have been developed, among them being heavy doses of the x-ray, so-caled "massive raying," and treatment with large quantities of radium. It has been pointed out, however, that in advanced and in so-called inoperable cases these treatments are not sufficient to arrest the disease, and therefore the technic of applying intense heat by actual cautery as developed by Dr. J. F. Percy has attracted considerable attention in the surgical world.

After many months of experimenting, Dr. Percy has succeeded, with the help of his instrument maker, in constructing a set of instruments which are as nearly perfect as possible, and it is claimed that with their assistance the procedure can be made reasonably safe as regards damage to the tissue in contact with the instruments, as well as preserving the urethra and the vagina intact.

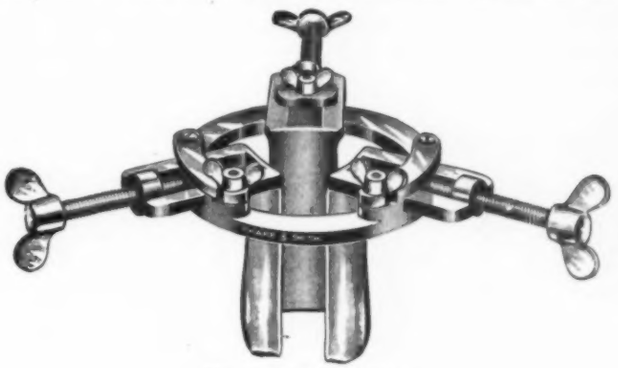


Fig. 1. Vaginal dilator.

Fig. 2. Water-cooled vaginal speculum.

The armamentarium consists of a vaginal dilator (Fig. 1), used where the vagina is too small to admit the water-cooled vaginal speculum (Fig. 2), cautery iron made of copper in different sizes (Fig. 3), and a gas furnace (Fig. 4), for the purpose of heating the cautery irons. Fig. 5 is another water-cooled speculum, which has a depression on one side for the purpose of introducing

Figs. 3, 4. Gas furnace for heating cautery irons and illustrations of cautery irons.

an angular bent thermometer in the bladder in order to measure the degree of heat coming into the bladder during the treatment or onto the urethra when these organs have been attacked by the disease.

The doctor also had an electric cautery constructed which he prefers to the gas-heated cautery iron for the reason that continued heat, instead of intermittent heat,

Fig. 5. Water-cooled speculum with depression to allow introduction of thermometer.

may be applied, which materially shortens the time of operation. The handle (Fig. 6) is also essential for the reason that with this instrument the vaginal speculum may be held in proper position with the assistant's hand out of the field of vision of the operator.

New Method of Holding Fractures with Ivory Plates and Screws.

BY DR. PAUL B. MAGNUSON.

The author claims that this new method stimulates the growth of bone in fractures and eliminates the necessity of any further operative procedures to remove the plates or screws, as the material is entirely absorbed by the tissues.

In oblique fractures it is practically never necessary to use a plate of any kind. These fractures may be held by two screws, one through the upper and one through the lower end of the fracture holding the fragments together. These screws are inserted in the following manner:

Holes are drilled through the upper and lower end of the fracture and at a right angle to it. Through these holes is put a tap (Fig. 1, No. 5) the same size as the screws to be used, which cuts a thread on the inside of the hole. The tap is then removed and ivory screws inserted, which fit snugly into the space. No force is required to put the screw in, as the hole is the proper size for the screw. The ends of the screws are cut off flush with the cortex of the bone on each side, leaving nothing projecting into the soft parts. The absorption of moisture by the

Fig. 2. Victory bone surgery engine.

ivory causes it to settle very tightly into the holes within twenty-four hours, and this allows no motion between the fragments.

The screws (Fig. 1, No. 7) are entirely absorbed in from three to four months, do not act as a foreign body, never have to be removed, and do not cause any pain while in place.

The plates (Fig. 1, No. 4) used in retaining transverse fractures are of two sizes. These are inserted in such a way that there is practically no strain on the plate, and it is therefore unnecessary to use a very large piece of material. They are braced on all sides by bone, with which they are in close contact, and the small size avoids the necessity of making a long incision and traumatizing soft tissues around the fracture.

The fracture is cut down upon and adjusted, and the periosteum incised and pushed aside in a space, at the largest, two and one-half inches long and a half inch wide. Parallel circular saws (Fig. 1, No. 1) driven by a motor (Fig. 2) are then operated parallel to the long axis bone and at right angle to the fracture. These saw blades are set with a washer between them, so that they cut parallel lines exactly the width of the plate to be used. The parallel incisions are made through one side of the bone only and into the medullary cavity, and the length of the plate to be used is never longer than one and three-quarter inches or can be made shorter if it is necessary.

After these parallel incisions are made, they are connected at each end by a hole drilled at each end of the slit (Fig. 3, B). This leaves a loose piece of cortex, which is lifted out by chisel (Fig. 1, No. 3), which leaves a slot, exactly the size of the plate to be used, down into the medullary cavity. Into this slot is driven the plate until it strikes the cortex of the opposite side. It will be found that

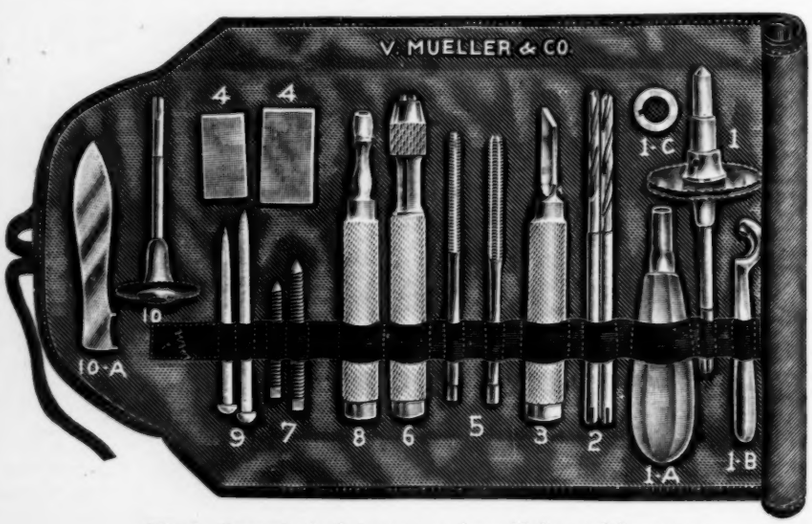


Fig. 1. Instruments, ivory screws, ivory blades, and ivory pegs.

this plate fits very snugly into the slot and allows no motion between the two fragments; it is braced on both sides and below by cortex. All that is necessary now is to drill a hole on each side of the fracture at an angle to the plate, and insert ivory pegs to hold this plate down against the cortex of the opposite side. This is done with a twist drill

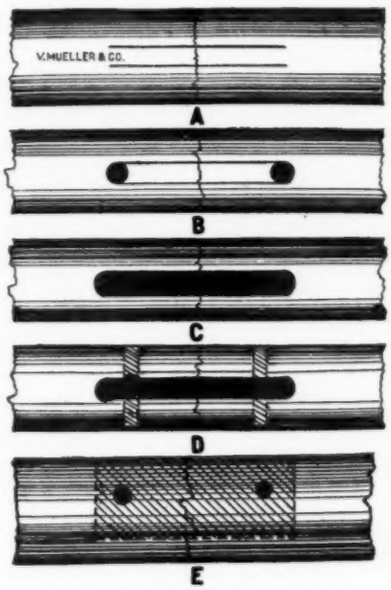


Fig. 3. Method of holding fractures with ivory plates and screws.

(Fig. 1, No. 2), which makes a hole exactly the size of the peg to be used. The peg (Fig. 1, No. 9) is driven through the bone until it is felt emerging on the cortex of the other side. It is then cut off flush with the bone and the other half of the peg used for the hole made on the opposite side of the fracture. If the plate protrudes beyond the cortex of the bone, it is cut off flush with the bone with a saw (Fig. 1, No. 10), and the fracture covered by fascia and skin, as in any other method.

The method is simple, rapid, and accurate. The instruments are made to fit the plates and screws, and it will be found that there is no difficulty in securing results with this method that cannot always be secured by putting a foreign body, such as steel, into bone.

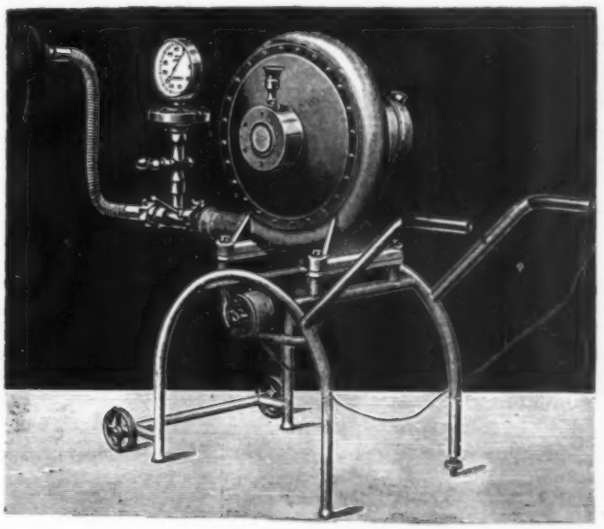
The plates are absorbed in from four to eight months, do not act as a foreign body, do not give any pain, will not allow angulation of the fragments in any way, and it is unnecessary to put in a large amount of material, as the plate is inserted in such a mechanically perfect way as to remove all strain.

Apparatus for High Pressure Narcosis and Artificial Respiration.

ACCORDING TO DR. SCHOEMAKER.

This apparatus is designed to replace large high and low pressure chambers, such as were originated some years ago by Dr. Sauerbruch. It consists principally of an electric motor, coupled direct to a blower. The motor and ventilator are built into a metal case, and are dust proof, so that they are not exposed to outside influences.

To comply with the requirements of modern asepsis, the apparatus can be easily cleaned with aseptic solutions. To the blower is attached a tube of large caliber, metal covered, with a suitable face mask. The anesthetic is in a small funnel in front of the blower, and with it the smallest quantity of air may be mixed and then forced into the mask. A manometer shows the pressure in the mask, and this pressure can always be regulated by applying the mask more or less tight against the mouth and nose. The air pressure is regulated during the operation according to the extension of the lungs. For this purpose the mask is provided with a small valve, which can be closed more or less, according to the pressure required. The apparatus is solidly constructed, the mechanical parts



Apparatus for high pressure narcosis and artificial respiration.

are as simple as possible, and the whole outfit is mounted on a stand, easily transported.

It has been found that in endothoracic operations this apparatus is also very satisfactory for artificial respiration in case respiration stops during the narcosis. It is stated that eight to ten inhalations and exhalations were sufficient to start the normal respiration in some cases, but, if necessary, artificial respiration can be continued as long as required.

Dr. Edmund J. James, president of the University of Illinois, announced recently that he will ask the next Illinois Legislature to appropriate $1,000,000 for a teaching hospital to become a part of the university.

According to the annual report of the board of hospital service managers of the Missouri Pacific-Iron Mountain Railroad, issued recently, the scheme of intrusting the control of the hospital service of the road to the employees, which was adopted sometime ago, is giving general satisfaction. Under the arrangement the managing board in control of the entire hospital service is composed of nine members—eight officials and other employees of the road and the chief surgeon, who is ex-officio chairman. Funds to carry on the work are raised by assessments of the employees in proportion to their salary. The report shows an increase in the net surplus of the year of $12,163, of which $5,000 has been set aside for the erection of an emergency hospital at Argenta, Ark.

One of the smallest hospitals in Philadelphia, the Woman's Southern Homeopathic, managed by a few women, has been making remarkable strides in development recently. After doing a unique work for women and children for some years in a large old house, the managers bought a fine corner property at Broad and Fitzwater streets, where they erected a handsome and substantial building, fire-proof and modern in every detail. In less than a year a first-class house adjoining the property was secured, needing only paper and paint to make it a most attractive nurses' home. The next step is the building of a small, up-to-date laundry in the rear of the property, which will be finished in another month, and then the little plant, caring for 58 patients, will be complete.

DEPARTMENT *of* NURSING

Mary M. Riddle, R. N., Editor,
Superintendent Newton Hospital, Newton Lower Falls, Newton, Mass.

Invalid Occupation in the Curriculum of the Training School.

BY SUSAN E. TRACY, R. N.,
Experimentation Station for Invalid Occupations, Jamaica Plains, Mass.

The introduction of occupation study into the curriculum of the training school should, in all cases, be preceded by a distinct consciousness of its need. This consciousness may exist only in the mind of one member of the staff; possibly the feeling may be shared by another. If the need be realized both by the superintendent of the hospital and by the head of the training school, the chances of success will be very good. More frequently the active interest is manifested by one officer, the attitude of the second being, at best, only a passive one.

It is safe to predict that this need will not be felt by the pupil nurses; to these, profitable experience consists largely of the witnessing of spectacular modes of treatment. Not realizing that these methods are rarely employed outside of the hospital, pupils deceive themselves with the idea that they are thereby fitted for private service. Probably those most cognizant of the need are the older graduates, who, having served in many homes where the entire responsibility of the twenty-four hours was placed on them, have sought for some profitable occupation both for their own as well as for the patient's sake. Perhaps they even go so far as to say, "I wish that my training had included something of the sort."

Ask the public what the trained nurse of today lacks most conspicuously. Is it more technic, or a fuller understanding of human, as opposed to merely physical, being? But, granting the fact that the patient's need is real, why saddle the already overworked nurse with the responsibility of this teaching? Why not bring in a craft worker to attend to this? The craft shop stands in relation to the sick as does the chemist's laboratory. There is demand for many products of both chemist and craftsman, but neither can be safely trusted to administer these to the sick. Only by those who understand invalid conditions should invalid occupations be taught.

How, then, may the pupil nurse gain practical knowledge of this subject? Except in rare instances, the need of this training will require some formal presentation and official recognition. A considerable number of hospitals have arranged for a single lecture on this subject. This will amount to little more than a pleasing and rather novel entertainment. Here and there, however, the seed may fall on a mind and heart determined on self-education. For such there is much hope. The duty of the nurse everywhere is to learn to observe and to record. Let her begin this in the realm of invalid activities, noting the peculiarities of each case and taking special care to study all spontaneous effort. From her constantly shifting world of patients she will gather much. Supplement this by the hints given by domestics, tradespeople, etc. All this represents unclassified material, but, when united with all that she finds within herself, beginning long before she dreamed of nursing, it may be set in order to good and definite purposes. Every private case yields much excellent material for this set of notes.

In all this it should ever be remembered that it is a subject studied for the benefit of the patient. Many nurses will not care individually for the work, but is not this true of many things required of all nurses? It is a part of the great whole, and therefore to be mastered for the sake of the sick.

There is a wide difference to be observed in presenting occupation study to patients and to nurses. In working with patients, one must consider the case individually and find just the work indicated. For example, this listless, phlegmatic patient may need the stimulation of a piece of red and white wool work in her hand; the nervous, twitchy girl across the corridor needs, it may be, to paint a pale yellow butterfly. The nurse should be able to judge the kind of work, the color, the amount, the time best suited to its execution. She must therefore be taught broad principles. For this reason her training must be dignified by a reasonable amount of theoretical instruction. If this is omitted and a class of nurses set down to learn various forms of light occupations, the instruction soon shrivels to a class in fancy work. The nurse will fail to identify it with her professional work. Text-books will be of some help just here, but they are few at present. The nurse needs to compile her own.

Lectures, with a limited amount of demonstration, may be given to very large classes. Here, also, problems may be set for the intervals, but the professor who branded the pure lecture method as a "broad highway to ignorance" was near the truth.

The question is often asked, "How long is this course?" And the reply is "Endless." This, however, is true—if nurses are taught six different forms of occupation suited to six different invalids, their training is advanced by so much. Ten lessons is a good course, twenty far better, continuous instruction best of all.

All courses for nurses should be preceded by two or three lecture periods. Illustrative material and some demonstration will accompany these. By the third lesson the class will be ready for some practical work. Ten members constitute a good class. In case a class numbers twice this, it is well to make two sections. It is far from easy to match work in the hands of many students and get any appreciable result in one period. The lessons should be given in the day time, and the one and one-half hour period seems best. One hour is too short for good work. During the past season lessons were given to a class of twenty seniors. The instructor came from a distance, and railroad fares were a considerable item. The classes were arranged thus: two sections were formed—the first met from 1:30 to 3 p. m., the second from 3 to 4:30 p. m. The same lesson was presented to both sections. The instructor stayed over night, meeting the same nurses in the same way on the second day, but giving the second lesson in the series. In the evening of the first day an informal lesson was given in the parlor, in which many of the officers joined. On the following morning the instructor kept open house to any interested visitors. There was also a running exhibit of the work of the class, which went on throughout the course. This was held in the reception hall and attracted much notice. The plan of this course was as follows:

Lesson I, The Baby; Lesson II, The Sick Child's Bound-

aries; Lesson III, The Land of Counterpane; Lesson IV, The Land of Counterpane (continued); Lesson V, Improvised Dolls; Lesson VI, Rake Knitting; Lesson VII, Basketry; Lesson VIII, Basketry (continued); Lesson IX, Bookbinding; Lesson X, Bookbinding (continued).

If possible to arrange for but few lessons, these should be devoted to children's work. No adult is better employed than when doing something to please a little child. The expense of material is small, since much of the instruction is directed to the use of waste matter. Nearly all of the children's lessons are provided for in this way. The adult work requires moderate purchase of supplies. The cost of instruction varies somewhat, and should always be subject to adjustment according to the conditions in individual schools.

It is early to report on what these courses have done for nurses, but some examples are noteworthy. Through interest aroused by a school giving only a few lectures, one nurse, when filling an executive position, instituted regular instruction for patients all the year around. She also arranged for considerable instruction to nurses. One of these nurses, herself an official, reports nineteen books bound, among which were her volumes of the *American Journal of Nursing*. After special attention to this work in her own school, another nurse has been elected to teach this subject in a university hospital. Here she has formed classes under the elective system. She teaches two two-hour periods weekly to nurses and superintends the work among the patients as well. A senior nurse from a large children's hospital was sent for a course of three months devoted to occupation study. She did excellent work, returned to her own school, was graduated and called back to teach occupations. A private nurse was called to care for an invalid who had had many nurses, but none who could teach occupations. She has secured by this means a case which has already lasted several years and has brought fine opportunity for travel.

An officer in a contagious hospital arranged for a course for the head nurses. In reporting on the work she said, "It did what was intended—the nurses talked more of basketry and less of desquamation."

One senior nurse in a large hospital recently applied for lessons at her own expense in order that she might institute suitable occupations in the wards for the treatment of diseases of the skin.

These are only a few of the many ways in which nurses are demonstrating the value of invalid occupations.

Hospital Trustees and the Training School.[1]

BY ADELAIDE NUTTING,

Department of Nursing and Health, Teachers' College, New York City.

When President Wilson said the other day, in one of his most delightful speeches, that in writing a paper he not only uses all the brains he has, but borrows all he can collect, he must, I imagine, have given a moment's satisfaction to a large number of people. I, for one, find it a genuine comfort to follow at a great distance his illustrious example, and say at the beginning of this brief paper that I have used all the brains I have and borrowed all I could lay hold of in the endeavor to say something worth your hearing on the subject of "Hospital Trustees and the Training School." On this particular subject, however, it has not been possible to borrow much, because, beyond Dr. Howland's interesting paper on "The Obligations of Hospitals and the Public to Training Schools for Nurses," little has been written dealing with the training school as a *special problem* in hospital administration requiring in a very special sense the thought and care of the hospital trustees.

The best available material is that dealing with university trustees, and it has been interesting and helpful to find out what is thought by men who have been closely studying the government of educational institutions. The late president of Harvard University, in his work on "University Administration," Mr. Pritchett, in the reports of the Carnegie Foundation, several eminent authorities in Professor Cattell's recent book on "University Control" all deal in various ways with the province, responsibilities, and powers of trustees. There is not much difference of opinion as to the kind of men who should fill this office, and the composite picture of a good trustee is of an educated man of affairs, representing the soundest element in the community, of good judgment, of deep interest in public welfare, and of such unquestioned integrity that he will not profit by his trust.

There also emerge a few pictures of other types of trustees who obviously should not hold this high office. These arrive through political favor or personal ambition, and use their trust to pay political debts or forward personal interests, or they are men of means whose gifts must be their sole contribution, or purely business men who would apply rigid business methods to every aspect of life and work. Most boards appear to be made up of a combination of these types, and educational institutions do not seem to be much more free from these weaker elements than do the charitable institutions with which we shall particularly deal.

Of any such institution the trustees are the heads and the true source of power. They establish the policy, hold and manage the funds, appoint the officers, and enact the rules and statutes; the *final word* and *authority* rests with them. They must *start* the machinery, study it, and safeguard it in its workings, constantly examine its results, and answer to the community for its failures. And there does not appear to be any straight way of evading or shifting this responsibility, once it is assumed. It may be divided, usually it must be, but it is not thereby dissipated; each member is as responsible as the other for the whole. It may be delegated, it must be, in the control of great institutions, but the law will hold that the act of the agent is the act of the principal.

This view of the powers and responsibilities of trustees should be clearly understood by all heads of training schools, and those who anywhere are struggling with peculiar difficulties in handling the complex problems of training school work should not be under any misapprehension as to where the ultimate responsibility for the training school lies. The superintendent of nurses is an agent of the trustees, the policy of the training school is the policy of the trustees, and squarely on their shoulders rests the final responsibility for its success or failure. This fact does not in any sense lessen the direct responsibility of the superintendent of nurses for the adequate fulfillment of the duties she has undertaken for doing the very best she can with the materials at her command, but it does make it necessary that the trustees should have a correct understanding of what is actually happening in the school. It should be due to no lack of moral courage on her part, to no weak and silent acceptance of wrong conditions, when the trustees remain ignorant of matters concerning the training school about which they should be informed. The difficulty in the situation appears to be that in most schools there is no regular direct means of communication between the trustees and the school. Such a committee of the board as is commonly provided in most educational and charitable institutions for all large and

[1] This paper was prepared for the St. Louis Convention, and read in the meeting on Nursing Education.

important divisions of work is omitted so far as the training school is concerned in the organization of most hospital boards. Yet it is probably safe to assume that few boards of trustees act today on anything, except business of a routine nature, which does not come to it through one of its committees, standing or special.

Now, I have watched for years able and devoted men who, as trustees, have given generously their best in time and thought to the problems of our great hospitals, but I have long felt that this large and important division of hospital work, the training school for nurses, has been singularly overlooked by them. Toward it, on the whole, they have not as yet fully met their responsibilities. I would go even further, and say that in many instances they hardly seem to be conscious of having any special responsibilities. The absence of training school committees, or any other bodies charged with special responsibility for the school, the absence of any definite financial appropriation for the needs of a school, the absence of proper provision for the most common, well-recognized school equipment—such, for instance, as suitable class and lecture rooms, adequate libraries, and teaching material—properly equipped teachers, the entire subordination of the work and life of the students to the needs of the hospital, the indifference to desirable educational standards and ideals in nursing, which it should be the school's first function to develop and cherish—these conditions do, I think, when carefully surveyed, lead one to this conclusion. If the same trustees were acting on boards of schools not connected with hospitals, they would take it for granted that such fundamental needs for school work must be provided, and would find ways and means of securing them. Instances are, in fact, known of trustees holding office simultaneously on boards of universities and of hospitals. As university trustees they forward wholeheartedly every educational measure and advance; as hospital trustees they ignore almost completely the fact that there is in the training school under their jurisdiction a definite educational problem involving definite obligations and responsibilities of no uncertain nature.

The hospital has taken over the education of nurses as its function and its right. In its educational capacity it controls virtually the whole system through which over 30,000 women are today being prepared for a profession of growing importance to society. To fail to understand this is not really intelligent, and certainly few men would expect to succeed in the conduct of their business if they did not look further into the future than do the trustees who permit the training school to be looked on merely as a "maid of all work" to the hospital. Such a policy is not merely shortsighted and unstatesmanlike—it is suicidal—for in the long run it is practically certain to destroy the spirit and the ideals of the women working in it, and to keep from it or drive from it the kind of women who are most needed. The strength of our hospitals does not depend on imposing buildings or elaborate equipment—it depends on the *spirit* and the *ideals* of the men and the women who do its work as well as on their ability and skill. To fail to appreciate the importance of the training school, to fail to foster its educational work and progress, is unworthy of the men who in other relations of life show conspicuous acumen and generous public spirit. Trustees cannot afford to have graduates who go out of our best training schools advise their sisters and friends against nursing as a profession because they are dissatisfied with the conditions under which they have been trained. They cannot afford to have said, as was said to me by a man well known and influential in philanthropic work in New York, "I would not allow my daughter just leaving college to enter any training school, because I have such contempt for their educational methods."

Now, there are ideas afloat, and rather prevalent they are too, that clear thinking on this particular subject is difficult, because the training school on its present basis is of such considerable financial value to the hospital. It always saves expense; it often, *in addition*, is made to produce revenue. To free it, to place it where it belongs, would mean expense. It would mean at the very outset the provision of paid service for a certain, in some hospitals a considerable, proportion of the miscellaneous routine work now done by pupil nurses and miscalled education in nursing. There can be no question that the proper conduct of a training school means expense, precisely as does the conduct of other good schools. The students should, of course, help to meet this, but not necessarily always by substituting labor for tuition and fees. But, frankly, I find it difficult to accept the idea that the whole question is one of money. There are other things bound up with it—tradition, custom, habit. I am inclined to believe that our trustees have become *accustomed* to looking on the school purely as the nursing department of the hospital, and its usefulness and convenience in that capacity inhibits, as it were, any larger vision of its usefulness. Its needs, above and beyond those with which the hospital is immediately concerned, stand far in the background and are obscured by the urgent needs of the hospital for much service.

Viewed as the nursing department only, the school, along with the other hospital departments, falls quite naturally and wholly under the jurisdiction of the superintendent of the hospital. He is the authorized, and frequently the only, channel of communication between these departments of the hospital and the trustees. What he thinks, they are apt to think; what he advises, they usually try to do; his policy becomes theirs. This was made very clear to me several years ago by one of the trustees of an important hospital. "We turn," he said, "to the superintendent for advice. We expect him to tell us what to do, and then we try as far as possible to do it."

It is not my intention to venture even a little way into this complicated matter of hospital administration, save to say that anyone familiar with administrative work must lean sympathetically toward a system which provides a clear-cut organization of departments and centralizes authority over them. But from this point of view, the more perfectly the school serves the hospital, the more valuable it is as a measure of administrative economy; the more essential as a part of a smooth-running and efficient machine which is the delight of the efficient executive. This attitude toward the school has come to seem to me natural and almost inevitable, for I have noticed that nurses who become hospital superintendents are, with a few exceptions, as apt as men in that position to become more interested in the management of the hospital than in the education of their pupils. Special concern or solicitude on behalf of the training school is lost in the effort to manage hospital affairs efficiently and economically.

Now, if the superintendent of the hospital does not see the training school in its true dimensions, he can hardly be expected to deal adequately with its problems; still less is he likely to be able to present them for solution to the trustees. And if the superintendent of nurses herself has no regular, open, authorized means of presenting these problems to the trustees, in what an irrational, untenable situation is she placed. Quite recently the superintendent of a training school said that she believed nearly all of her trouble would cease if she could have direct, open access to her board of trustees, as direct as that enjoyed by

the superintendent of the hospital, and without the necessity of having the needs of her school translated either through the superintendent or the medical staff, and lost occasionally in the translation.

Without being quite so confidently optimistic, I am yet convinced that a direct relationship between the trustees and the training school through its own head is necessary for a sound governmental policy. The best practicable way of providing this seems to be through a standing committee with rather special functions and powers. It is true that some schools which are provided with such committees (and there are a few) do not appear to derive marked benefit from them, but that would be offset by the number which do derive benefit, and would not affect the principle, which is correct. It is equally true that some well-known schools seem to be getting on pretty well without such a committee, but that may be due to the liberality and intelligence of the existing administration, which at any moment may be replaced by one of an entirely different caliber, in which case the school becomes helpless to maintain proper standards.

It is clearly the responsibility of the trustees to have a policy for the training school, to define it and to maintain it, materially and financially, as well as in a moral and ethical sense. And I know of no better way than the formation of a good, strong committee of the trustees as the first step. Through such a committee many of the problems with which discouraged and disheartened heads of training schools are now struggling might be studied and in some measure solved. At least they would have the satisfaction of knowing that these problems were known. The problem of lack of suitable applicants, for instance, is clearly a question for the trustees, but they should not be permitted to attack it without such a serious and careful study of the whole situation as will enable them to understand what they are about, for lack of applicants is a symptom, and the causes may not be easy to discover, they may lie partly in and partly outside the hospital, and the serious study of this one crucial problem may help in solving others, and pave the way to much needed reforms.

The trustees, acting through an alert and interested committee, could study the needs of the school on its merits, as an educational institution with important work to do, quite apart from the requirements of the hospital for service. I question very much if either hospital superintendent or training school superintendent could make such a study; certainly not while engaged in "active service"—they could not see through the smoke. Such a committee could, after appropriate study, plainly lay down a budget for training school expenditures, and either secure from the trustees adequate financial appropriations for obviously necessary work, or seek them outside the hospital in suitable endowments from friends of nursing and believers in education. Every training school should have at its disposal such funds as it needs for its work, and the spectacle of its superintendent pleading for a few necessary books or for a teacher for her students should become so rare as to fade even from our memories.

Such a committee could find ways perhaps of upholding the superintendent of nurses in her efforts to maintain suitable standards of education for admission. I am no advocate of high educational standards for admission to training schools. College education is absurdly out of the whole question, though our schools should be so conducted that women with college training will more and more desire to enter them. Not even a definite high school requirement should be made as yet, because in our present state of education throughout the country that is plainly impossible. Nevertheless, the bulk of our students should have had full high school work or an acceptable equivalent for it, and we should be steadily working in that direction. We should not any of us be willing to admit to our serious profession women whose school life has ceased at 13 or 14 years of age.

Finally, the trustees through such a committee should watch the tendencies of the day; they should know what the graduates of the school are doing, and what new fields of nursing are developing, under the influences of medical thought and sanitary science, which call on the school for changes in its methods or enlargement in its work. There are new and imperative demands made on the nurse of today, and her work in the hospital is usually her only preparation for them. No sensible person would wish to change suddenly or radically a system which has been the growth of years. It was probably the best that could be arranged under the conditions and at the time, but it may not be the best that can be arranged at a later day and under markedly changed conditions.

I see before me the vision of a school working out its educational ideals with complete freedom, adjusting its measures in response to the carefully ascertained needs of the community, and offering a quality of education and training which commands its entire respect. I see the training school possessing complete autonomy as a school, and yet carrying on a very large portion of its work in the hospital. Its body of students are working devotedly in the hospital, eager to secure the rich opportunity for knowledge and training there given. The whole system is carried out with the most frank and cordial relationships and in the finest spirit of cooperation, each benefiting by what the other has to give, each dealing justly and honorably with the other. And it seems to me possible that a better understanding by our trustees of training school problems and ideals may bring this vision nearer.

Nursing In Infancy and Childhood.

BY HENRY F. KEEVER, M. D.,
Assistant in Pediatrics Harvard Medical School; Junior Assistant Physician Children's Hospital, Boston; Assistant Physician Newton Hospital, Newton, Mass.

PNEUMONIA.

Lobar pneumonia is a primary disease, characterized by sudden onset and regular temperature, which rises abruptly. This is accompanied by a corresponding rapidity of the pulse and respiration. It is due to an infectious organism, and attacks generally one lobe or part of a lobe. It is ushered in by vomiting, dyspnea and rapid rise in temperature. The child usually looks sick, the respirations are shallow and rapid, and the prostration is marked. In typical cases the disease runs its course in from five to eight days and the temperature falls by crises.

Bronchopneumonia, on the other hand, is usually secondary to a preceding bronchitis, occurring either alone or in the course of some other disease. It is characterized by a slow onset, long course, has an irregular temperature, and the respirations and pulse increase slowly with the temperature. Weak and debilitated children show a marked predisposition to bronchopneumonia. The walls of the smaller and terminal bronchi are affected, becoming thickened and infiltrated with cells. The lesions are irregular in their distribution and usually occur in both lungs.

The treatment of pneumonia, broncho and lobar, as in bronchitis, is essentially hygiene. Fresh air is of the utmost value, and here we find that cool air, 51° to 60° F., or even lower than 50°, is of distinct advantage. The cold air acts as a stimulant to the respiratory system, and patients do better than if they are in warm rooms. They should be thoroughly protected with blankets and heaters,

and a screen placed near the open window to protect from direct drafts. Bathing should always be done in a warm room.

The temperature in pneumonia may rise to 104° or 105° F. Children bear high temperatures very well indeed. Their heat centers are not well regulated, and consequently high temperatures are not so significant as in adults. What guide shall we follow in dealing with high temperature? If the child is restless and irritable, or delirious, with the high fever, then it is our duty to reduce it. This reduction will increase the patient's comfort and decrease the work of the heart. The best methods of reducing temperature are the sponge bath and cold pack.

Sponge Bath.—Alcohol, 1 part; water, 3 parts. The child is stripped and placed under a blanket. Begin with water at 95° F., so as not to frighten or antagonize the child; reduce gradually to 80° F. Sponging may be continued for fifteen minutes, and should not be repeated oftener than every two hours. After sponging, the patient is rubbed dry with a coarse towel. It must be remembered that too frequent sponging exhausts the patient.

Cold Pack.—In giving a cold pack, a warm, moist bath towel, temperature 95°, is wrapped about the child from its neck to midthighs. A hot-water bottle is placed at the feet and a warm dry blanket should cover the child completely. The bath towel is moistened at intervals of two to three minutes, the temperature of the water being gradually reduced to 75° F. In this process of moistening the towel it is not necessary to remove it; the child is turned from side to side gently, thus giving access to all parts of the pack, and the water is sprinkled on by hand. The temperature should be taken every half hour, and when reduced to 102° or 102½° F. the child may be wrapped in a warm, dry blanket. Children can be kept in a wet pack continuously without exhaustion. Fresh towels should be applied not oftener than every three hours. Children bear tub baths for reduction of temperature poorly, principally because of the undue exhaustion attendant on them. The diet should be the same as in bronchitis, which was discussed in the preceding paper.

For pain, cold applications are usually helpful. At first, until the surface is numbed, they may be disagreeable, but after the surface is chilled they afford great comfort. If heat is applied instead of cold, either a hot-water bottle or a mustard paste may be used. In making a mustard paste it should be made of 1 part of mustard and 3 parts of flour, with enough hot water to make a thick gruel. This should be spread between two layers of old linen and applied for not more than fifteen minutes at a time. Care must always be taken that it be not too hot and that the patient's skin is thoroughly anointed with vaselin before and after, in order to avoid blisters.

The Crisis.—Close watchfulness is needful during all stages of pneumonia, but especially when the crisis is expected. Then the temperature in infants and young children may fall with such rapidity to several degrees below normal that collapse takes place. The skin becomes cold and moist, the pulse feeble and intermittent, and the child may become unconscious. This is a most critical period. The child should be taken at once to a warm room, heat applied externally by means of heaters or a hot pack, and a quick stimulant administered, preferably aromatic spirits of ammonia.

After the crisis the patient should be kept in a warm, well-ventilated room, and the nourishment forced to its digestive capacity. It is surprising to note the tremendous recuperative powers of children after an acute disease like pneumonia.

When the patient has been placed under the best hygienic and dietetic conditions, we then can use drugs to advantage. This phase I shall not discuss, but simply mention that the tendency is rather to overdo. Some one has said that if a well child were given syrup expectorants, stimulants, baths, local applications, something every hour or two in the twenty-four, it would have to be a strong child indeed to withstand the treatment. Make the intervals at which the child is to be disturbed at night as long as possible by giving food, drugs, and local treatment at one time. Three-hour intervals should be the shortest. When you have done your utmost to conserve the child's strength, to give nature a chance, and have tried to make your patient comfortable, you have gone a long way in the successful treatment of any disease.

Nursing in the Philippines.

BY R. C. THOMAS, M. D.,

Appointed Medical Missionary to the Philippines, May, 1904, by American Baptist Foreign Mission Society.

The nurses who have come to the Philippines have usually come under the auspices of the army, the civil service arm of the United States, or some foreign mission board. Of the first two branches of service a medical missionary knows comparatively little at first hand, but of the latter branch he knows more. Something of nursing in a mission hospital in the Philippines may be of interest to Occidental nurses, now that the "Land of Tomorrow" has become a favorite table topic at home.

In the town of Iloilo, a small city of some 40,000, more or less, medical mission work was begun by Dr. J. A. Hall, of the Presbyterian board, in 1901. Work was carried on at first in a bamboo building, known in the Orient as a "shack." In 1906 this was supplanted by a neat 30-bed hospital of wood. By 1909 the Baptist board had united with the Presbyterian in carrying on the institution, which became the "Union Mission Hospital." At that time two American doctors were on the staff and two American nurses were provided for, and there was a corps of between twenty and thirty native assistants. In 1906 the first "Nurses' Training School" in the Philippine Islands was organized in this hospital. Today this school has grown to a nursing force of twenty, and the other helpers include ten male assistants, a housekeeper or market woman, an office and a dispensary clerk, four laundresses, and a yard boy, making a total of thirty-eight. With the two American doctors and two American nurses, the array becomes fairly formidable for a little hospital of 60 beds on the "rim of the earth," or "off the map," as some would put it. This historical excerpt is given to rouse American nurses to the fact that medical work in these far-away isles is growing to keep pace with the "hustling" methods of the American Government in handling the East. The training school has already celebrated three graduation exercises, and launched nine little Filipino nurses upon the world after a course of three or more years of training. A member of the first graduating class is still in the hospital, and she has become a most useful member of the force as head operating nurse. She has absorbed something of the dash and energy of our American nurses, all of whom have had excellent training in American hospitals, and have given themselves heartily to the work of training their little brown sister in their profession. It is astonishing to see how the personality of these American nurses has stamped itself on these Filipino girls, who become more energetic in their work and even brighten up their countenances by associating so closely with American women.

The work of the American nurses in a mission hospi-

tal, such as the one in Iloilo, is similar to that of a head nurse at home in a training school, with all the cares of the housekeeper besides. When one of the two American nurses is on furlough, the remaining incumbent has to work even harder to care for night as well as day nursing. Add to this the trying character of the climate, and one has a picture that is fairly true to life.

Fig. 1. First nurses graduated in the Philippines, Mission Hospital, Iloilo.

The most important duty of the American nurse is to see that her orders are carried out. That sounds like an easy task to one in America, where people are willing to assume responsibility, but out here it is the most difficult of all duties. The American nurse has literally to "camp on the trail" of her "little brown sister" and to instill into her Oriental mind that exactness and completeness are words in good and regular standing in the American dictionary, even though they may have dropped from the book in the East. It is this continual "following up" that makes nursing in the Orient trying. As the nurses often say, "It would be so much easier to do it myself," but in that case, though the task would be completed and completed well—for few nurses are more thorough than those trained in an American institution—the difficulty would be that the Filipino girl would never improve in her methods. It means a constant and persistent "following up," and a repetition of the same lesson on the morrow and many days after the morrow, but in the end the teacher is not infrequently rewarded by discovering that certain of the fundamentals have become a habit on the part of her pupils, and she may then begin to "follow them up" on some other point.

Even when such a lesson is learned, it is a difficult task to make a Filipino girl assume responsibility. The race lacks initiative and executive ability as a rule, and it is only by dint of the most persistent effort that this essential is developed. Occasionally it is the reverse, and a pupil nurse in the early stages will assume too much responsibility, as when one little sister took the temperature, on her own initiative, of a patient who was not very ill at half-hour intervals all night long. But this is not the rule. Generally the nurse is timid and afraid to go ahead without orders, and if some mishap occurs, due to their lack of "rising to the occasion" in an emergency, she is not prone to regard the mistake as blameworthy.

Again, a feature of Oriental nursing that is less conspicuous at home is the fight to secure neatness, orderliness, and cleanliness. In a land where it has long been a tradition that bathing is hurtful for the sick, and where the commonest query on the part of patients, some of them of the upper class, is, "When may I take a bath?" one is not surprised that the art of immaculate asepsis is "lost." In fact, the very word for "soap" was not to be found in the native tongue, their closest approach to this indispensable article having been a bit of stone. But by patience and painstaking care and repeated object lessons the Filipino will eventually acquire a grasp of what real asepsis means, a lesson which is especially important in the Orient, where microorganisms are plentiful.

Another "snag" that the nurse in a mission hospital encounters is the dialect. This Visayan language has been likened to the gurgling that would result from "gargling nails." It is hardly a euphonious tongue, as it is quite the reverse of the liquid Spanish used by the upper class. Instead it is plentifully supplied with gutterals. The "mga," the sign of the plural, and the "nga," that figures so frequently with adjectives as a pronoun and in other situations, are not easy to pronounce or harmonious to the ear.

Instead of our hearty "Good morning," we have to content ourselves with "Ma-ayong aga," and for "Good evening" we must say "Ma-ayong gabi." How can one talk amiably in such a tongue when the words meaning "please" are practically never used by the people themselves, and are as likely as not to provoke a smile when used by foreigners? Moreover, until recently the absence

Fig. 2. Boys' dormitory, Capiz.

of text-books and dictionaries has made the task doubly hard. But all these difficulties are negligible, and doubtless far less conspicuous than they are in a land like China, where the language is notoriously difficult, because of the fact that it is not hard to acquire enough of the dialect here to make the nurses understand in a comparatively brief space of time, and by object lesson and the all-comprehensive "Subung sini" (like this) the Ameri-

can nurse is able to carry on her work from the outset, and as time goes on to perfect herself more thoroughly in the eccentricities of the language. But the difficulties, fortunately, are not insurmountable, and there are a number of encouraging features in nursing in the Orient that are not to be forgotten. In the first place, the native nurses have shown a fair degree of "stick-to-it-iveness" which is rather surprising in a land of "Tomorrow," where people are inclined to cease work when they are tired and where there has been no cherished ambition for self-development or anything else much, except a fair amount of simple food and a modicum of clothing.

One can hardly wonder that the native peasant is content with his lot in a land where nature is so lavish that he can cut some bamboo and build and furnish his house, pick breakfast off a banana tree, and sleep comfortably on a split bamboo floor, without worrying over the matter of who is going to pay the bill of the coal man. But in spite of this lack of the hard knocks of adversity that have brought so many Occidentals into the line of duty

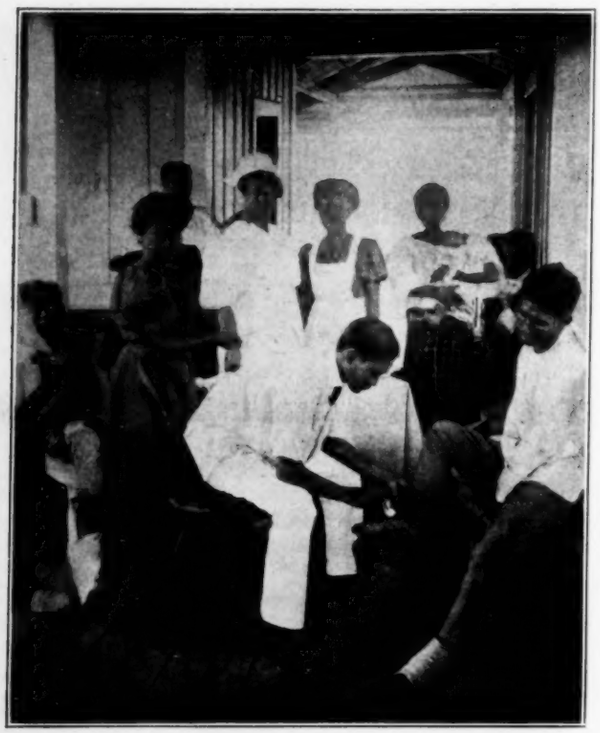


Fig. 3. Clinic at Union Hospital, Iloilo.

and prodded them on to success in a chosen vocation, these little Filipino girls have put in several years of honest toil without running away. This is commendable, and a hopeful sign.

In the matter of learning how to nurse, as well as in everything else in this country, the people must be given time to learn their lesson thoroughly; but let them once have the lesson learned by rote and committed to memory past forgetting, and we will have some ground to believe that they will remember it. The one essential for improvement will be, however, a certain amount of persistence in following up this lesson, and their steadfastness so far gives us good hope for the future in this respect, if we only do not desert them too early.

The Government is "trying out" an experiment right now in this matter of endeavoring to discover just how soon the Filipino may be considered competent to carry to completion the ideals the American has been endeavoring to inculcate here. There are many who are skeptical concerning their immediate fitness for self-government at present—most of these skeptics perhaps comprising those who have lived here, in contradistinction to those who have not—but whatever the views concerning the exact time it takes to educate a Filipino properly, the consensus of opinion would be, now that the task has been undertaken, that enough time should be allowed to make the work fairly complete. This holds true in medical work as in other branches, and the fairly praiseworthy persistence of our nurses in pursuing their course to the end is a hopeful sign.

Another pleasant feature in working with these people is their courteousness and teachableness. They obey orders fairly well when they understand them, and, although they are likely to lose their heads in an emergency, yet in the ordinary routine of the daily duties they are quiet and earnest. They are naturally graceful and gentle in their ways, and, when time has ripened these natural graces into professional perfection, these little brown sisters ought to be both "useful" and "ornamental" in a sick room. After all, the "ornamental" element in nursing is of some account, and a quiet, sympathetic demeanor is even more valuable in certain respects than the garnishing of a dish or the neatness of a tray, however immaculately professional the nurse who carries it, and right at this point the Filipino girl may be destined to excel.

But, after all, the most satisfying and sustaining feature of nursing in a mission hospital is the assurance that one is doing something well worth while. The pecuniary remuneration is small and the work is hard, but the completely satisfying reward is the assurance that in such a hospital a nurse is emphasizing every day that she lives the nobler side of her noble profession—its humanitarianism. She is doing the work of a "Good Samaritan," and the harder her task, and the more distasteful it might prove to one who was in the "business" to "earn a livelihood" merely, the more she rejoices to spend her energy in such divine service.

The appeal of the need in a land such as this is its unanswerable argument. In 1907, even in Manila itself—at that time a city of 250,000—the total death rate was quoted as 50 percent and the infant mortality as 60 percent. Dr. Stuntz, of the Methodist board, while home on furlough, told of these "little white coffins" with telling effect, and on one such occasion Miss Fanny Crosby, the blind composer, declared she would "sing" the hospital for which he pleaded into existence. The conditions are better now, but the call is still a ringing one both here and in other more needy fields for the trained American nurse, the woman with a clear brain and a warm heart, whose professionalism is merely a cloak to conceal her real sympathy and love for those who suffer.

A Question of Health.

BY MYRTLE YOUNG,

Physical and Social Director of Nurses, Newton Hospital, Newton, Mass.

Progress is a fact. To read the pages of any journal of nursing convinces one that no group of workers recognizes this more than nurses. The necessity as well as the advantage of furnishing for nurses in training a higher education and broader social privilege is taking deserved space in discussion. Not a few have felt the desire to meet these and other vital needs. The young woman's health is paramount, and it is well to start off with first-

hand information via a physical examination given by school authorities. In case this test shows good health, we appreciate the responsibility and the advantage of maintaining it. On the other hand, it is our duty to the school as well as the young woman to exclude from the nursing forces one who cannot start with this firm foundation for success.

From the beginning of the course, proper care and exercise of that part of the body showing slight weakness may mean in the end all the difference between joy in doing one's work and half-heartedness in its performance. The attention now given in many training schools to the feet of the future nurse is warranted by the results in increased efficiency. Nowhere perhaps are the hours more occupied than in hospital life, and yet fifteen minutes a day spent in corrective gymnastics under the supervision of a competent teacher will give the young woman, who needs some particular exercise for a weak muscle, a strength and energy which will enable her to do the same amount of work better and in less time. Her bodily machine will work without friction because every part will be doing its peculiar duty. In speed and ease it is safe to say that this young woman will give back to her school full value for every minute spent in self-improvement. In one hospital this plan is being carried out through the orthopedic clinic by the doctor in charge and his assistant.

And what opportunity shall we offer the normal girl full of life and energy that she may go through her three years of training and show a higher physical test at its close than when she entered as a probationer? Must we look far in the future for a gymnasium? While its educational features may form no part of a nurse's course, its recreational value is undoubted. The tired brain worker and the toiler in the store or shop find in a local gymnasium play that puts new life into mind and body. So strongly have our great industrial plants felt this need of the men that at their own expense they have equipped gymnasiums and employed instructors. The consensus of opinion among educators is in favor of physical training, and it would seem that a school for nurses has a peculiar need. The life of a pupil nurse is unusually confining, and for the young woman of twenty-one or two is so intensive as to almost be unnatural. A healthy outlet for the play spirit is in recreative games and dances. She is daily taxing her strength too heavily to exhaust herself further in heavy apparatus or floor work in her hours off duty, but games, light drills, and folk dancing are sure to bring the young woman relaxation. Whenever her play hours are spent out of doors, the time is doubly valuable. Where space permits, tennis, archery, skating, and basketball will make a strong call to the open. Even limited roof space can offer the games of the steamer deck.

May we say prophetically in conclusion that effort toward higher physical standards for nurses will react to the benefit of the hospital and later to that larger community, the public which she serves?

A group of five new buildings, modern in every detail and containing the most improved equipment known to medical and surgical science, will be erected by Mount Sinai Hospital, New York City, in the near future. The proposed expansion will represent an expenditure of approximately $1,500,000, and should make the Mount Sinai one of the most efficient disease fighting establishments of its kind in the world. Among the new features planned there will be, in addition to general improvements, a laboratory three times the capacity of the present one, a detention ward, a dispensary for babies and children, with a special ward for nose and throat operations.

Reflections From Many Sources.

"One must see visions and dream dreams before great facts come into existence."

"Work shall be lifted from our hands and carried on to loftier ideals and higher aims by the strong young hands, hearts, and brains of future nurses."

"The woman who would be a success as a nurse needs the combined qualities of a trained mind; capable hands and body and all must be dominated by the soul."

"We look toward the day when the ideal nurse will be the rule and not the exception—her influence felt in homes, in the hospital, in our educational institutions."

"Our methods should be direct, simple, and easy to understand, and the spirit that underlies them should be gentient's comfort. Her candle goeth not out by night."

"Can a woman in any other kind of work find a higher ideal or a greater responsibility? Where human life and health are concerned, what shall we term 'the little things'?"

"Never seek for the soft spots or the easy places; if you get them, you will surely lose golden experiences that will surely be regretted by and by, when the opportunity is gone beyond recall."

"A nurse's personality is a factor that can never be disregarded. Certain qualifications of mind and body may be born in us, but it is always in our power to modify or increase their significance."

"Nurses have unlimited opportunities of using their influence, by voice, pen, and their own lives and work, to bring others to a practical realization of the work that must be done through education."

"Training has given us our definite place in the community, and carried us beyond the confines of creed and of country, beyond the bounds of luxury and poverty, into close communion with the brotherhood of man."

"By night or by day a nurse must be on the alert—she must have presence of mind, she must abound in tact and patience, and be unwearying in her efforts for her patient's comfort. Her candle goeth not out by night."

"Many a woman's success either as a pupil or a graduate nurse is wrecked, not for lack of knowing how to do her work well, but from her ignorance or neglect of the practical application of the ethical side of her profession."

"The every-day management of a large ward, let alone of a hospital, the knowing what are the laws of life and death for men, and what the laws of health for wards (and wards are healthy or unhealthy mainly according to the knowledge or ignorance of the nurse), are not these matters of sufficient importance and difficulty to require learning by experience and careful inquiry, just as much as any other art?"

Members of Washington society attended in large numbers a bridge party given for the benefit of the antituberculosis campaign in Porto Rico. At least $1,000 is needed to equip the tuberculosis hospital recently erected in Ponce, Porto Rico, as a result of the efforts of the Antituberculosis League of the island, and public-spirited women of Washington, including the wives of the secretary and assistant secretary of war, are solving the problem of raising the money. The Antituberculosis League of Porto Rico was formed in 1906, at a meeting attended by American women at San Juan, at the residence of Governor Winthrop. The Ponce branch was organized in 1907.

REVIEWS *of* NEW BOOKS

A Manual of Clinical Diagnosis by Means of Laboratory Methods—For Students, Hospital Physicians, and Professors. Charles E. Simon, M. D., professor of clinical pathology and experimental medicine in the College of Physicians and Surgeons, Baltimore. Eighth edition, enlarged and thoroughly revised. 8vo, cloth. Price, $5. Pp. 809, with 185 engravings and 25 plates. Lea & Febiger, Philadelphia and New York, 1914.

There is little to be said about a scientific book that has gone to its eighth edition with a growing popularity. The work, of course, is up to date in all manner of diagnostic tests of laboratory character, including diagnostic methods of Abderhalden; the technic of the Wassermann reaction has been rewritten in the new volume; the applicability of the complement fixation test to latent gonococcus infections having been satisfactorily established, the technic is embodied in the new edition and should prove extremely useful. Renal diseases have been given special prominence, including modern methods of investigation for both the laboratory worker and the general practitioner. Two hundred and fifty pages of the new edition are devoted "to the essential factors in the laboratory diagnosis of various diseases." This section takes up laboratory findings under diseases, alphabetically arranged, and under each disease is given the essential points of diagnostic significance. This is a new feature in text-books on medicine, and should be an extremely valuable one, not only for convenience in study, but as a time saver and for students preparing for their examinations.

Infections of the Hand—A Guide to the Surgical Treatment of Acute and Chronic Suppurative Processes in the Finger, Hand, and Fore-Arm. Allen B. Kanavel, M. D., assistant professor of surgery, Northwestern Medical School, Chicago. Second revised edition. 8vo, cloth. Price, $3.75. Pp. 463, with 147 illustrations. Lea & Febiger, Philadelphia and New York, 1914.

Dr. Kanavel has given us a practical work on a surgery that we meet and have to deal with every day. His book should be of great value not only to medical men, but to those who are responsible for the activities in hospitals, in dressing rooms, wherever there is emergency work to be done, and even for home consumption for those who have sufficient special knowledge to apply the practical devices given in many parts of this work. The author has made a special study in this field, and brings to his task a first-hand knowledge in anatomy, physiology, bacteriology, and pathology. A thumb-rule chapter on "Diagnosis and Treatment" in general makes up a sort of glossary for classifying and finding various kinds of cases under which the book is divided. Dr. Kanavel has done an excellent thing in this book, and it should be greatly appreciated by the great mass of practitioners, and it should be in every hospital library, obtainable by interns and dressing nurses. The chapters on erysipelas, lymphangitis, and cellulitis seem especially valuable to this particular reviewer, and also the chapters on gas bacillus infections and what the writer calls erysipeloid manifestations. There is a chapter on anthrax, and the book closes with a discussion of complications and the sequelæ of these infections. Taken altogether, it is a very valuable work.

Surgery—Its Principles and Practice—For Students and Practitioners. Astley Paston Cooper Ashhurst, A. B., M. D., F. A. C. S., instructor in surgery in the University of Pennsylvania, associate surgeon of the Episcopal Hospital, assistant surgeon to the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases. 8vo, cloth. Price, $6. Pp. 1,141, with 7 colored plates and 1,032 illustrations. Lea & Febiger, Philadelphia and New York, 1914.

This new text-book of Surgery is probably the most important publication of the year in any branch of medical science. It has been designed and prepared by one of the foremost surgeons and teachers of the present time. It represents the most modern thought and practice, and reflects the unusual qualifications, literary as well as professional, of its author. Dr. Ashhurst has presented clear and accurate statements of facts, and has placed emphasis on the underlying principles; he has given particular attention to pathogenesis, diagnosis, and indications for treatment, and has completed the whole with adequate descriptions of operations. A remarkable feature of the work is the magnificent series of 1,032 illustrations, which are almost entirely original, and have been prepared especially for it. Each one has been chosen for the information it conveys. The sections on fractures and dislocations and on diseases of the bones and joints will be appreciated by those familiar with the author's excellent monograph on "Fractures of the Elbow." Genito-urinary surgery, gynecology, and orthopedics are discussed at sufficient length to meet the requirements of general surgeons.

Vacuum Cleaning Systems—A Treatise on the Principles and Practice of Mechanical Cleaning. M. S. Cooley, M. E., mechanical engineer in the office of the supervising architect of the treasury. Price, $3. Pp. 232, with 105 illustrations and 20 plates. Published by the Heating and Ventilating Magazine, 1123 Broadway, New York.

This octavo volume of 232 pages is in reality a scientific treatise for engineers and for mechanics scientifically interested in the evolution of mechanism for cleaning purposes. The author develops his subject from the point when mechanical cleaners were first put into use in the form of mechanical brooms in 1880. These brooms evolved into the ordinary carpet sweepers of today, and are the basis of the more modern renovators operated by large steam plants. It is an easy step from mechanically geared sweepers and renovators to vacuum apparatus. The book goes into various types of these latter devices, describing in detail the principles of each, with tables indicating their relative efficiency under given conditions. The book also goes into detail for testing the efficiency of various types of cleaning machines, and includes specifications for the benefit of architects and contractors. This book should prove especially valuable to hospital architects and those administrators who take a personal interest in the mechanism of the things they use in their institutions, especially just now when we have recovered from the first burst of enthusiasm over the universality of these mechanical cleaning devices and when we are coming down to a point of their definite analysis for various purposes in our institutions. The writer of the book is careful not to commit himself to an advocacy of any particular type of machines for any purposes.

QUERIES *and* ANSWERS

An Objectionable Staff Member.

To the Editor of THE MODERN HOSPITAL:

We have a man on our medical staff who is objectionable to everybody—to the other doctors, the nurses, interns, and everybody who has to work with him. But he is so strong socially and in a business way—and professionally, too—because he is a good doctor, that the board is afraid to drop him or even to call him down, even for his brutality to the nurses. Is there any way we can get rid of this man? A WORRIED SUPERINTENDENT.

You have one of the hardest problems in the hospital world on your hands, and one of the commonest. You are the representative of your board, you know, and must help them solve a problem they, too, are worried over. The best way to begin is to make a careful analysis of the objectionable one's value to the hospital. Do it fairly, because a good deal may depend on the outcome. First, take the financial side. How much is he worth in dollars and cents in the course of the year? How much money have his patients paid to the hospital during the past year, and how much of that was profit to the institution, because some doctors demand so much that even their highest paying patients are actual losses. To make this analysis you should have the total number of patients sent in and the length of stay, the amount each paid in, and for what. If your bookkeeping does not show these facts, it ought to, and you should make it do so in the future. Then take each of his cases and analyze it; how many could he have sent to another hospital or treated at home or in his office, and how many and which would have come to the hospital anyway and had another doctor—in other words, can he control his clientele with respect to the hospital? Is his presence on the staff bringing or holding annual subscriptions or adding in any way to the financial support? If he were dismissed, would any part of the income be lost or any gift funds be diverted to some other institution? This is your financial analysis, and the results will appeal strongly to your board, unless there are personal relations that would outweigh the facts.

Now take the intangible things. Does he occupy a professional place that could not be filled by one of the other men—not today perhaps, but in a year or two? Is he so much better as a physician or surgeon that he would be a distinct loss to the sick? Could someone else, more agreeable to work with, give your sick as good care? Are you quite sure that, after all, his "brutality," as you term it, is not in the interest of wholesome discipline, and, though intensely disagreeable at times, does not his influence contribute to better technic, more rigid enforcement of needful rules, and an all-round better service on the part of everybody? Some of these "brutal" men have a "method in their madness," you know, and are merely strict disciplinarians—with an intensely uncomfortable way of going about it.

Then, after you have weighed all the facts, and placed them before your board, or before some sympathetic, but hard-headed member, how would it do to get the board's permission for you to "have it out" with the doctor? But do not allow yourself to be betrayed into such a conference unless the board has agreed to stand by whatever you do, because the doctor might defy you—then where would you be?

On the other hand the doctor might tell you some things, with all "the cards on the table," that you had not known before, and that would modify your opinions on the subject. There are always possibilities of there being two sides to the case. But such a conference as we are thinking about, in quite unmistakable English, will very often clear the atmosphere and result most happily, especially to the one who has the right side of the argument.

How to Create a Hospital.

To the Editor of THE MODERN HOSPITAL:

We have a typical western city, with a population of 14,000, and with a prosperous farming country around us. There are twelve doctors, three practically retired, two specialists—nose, throat, ear, and eye cases; there are no mines or mills to speak of, excepting one planing mill, a furniture factory, and a number of small manufactories. There is one small hospital that is owned and conducted by a doctor who alone sends patients there; it does not stand very high. Then, there is a private sanitarium—for mental and nervous cases, and I think alcoholics and "dope fiends."

We think we should have a good hospital, but are not sure we could support one. I should have said that the nearest large city, with a state university hospital, and high class medical men and surgeons, is fifty-five miles away, on rather uncertain transportation line, with trains only twice a day each way. We have almost no strictly dependent people in our town, but a good many who are in very modest circumstances—families that must live on $50 or $60 per month and pay small house rent; and we have no very rich people, and only forty or fifty families that have more than a living income without working or doing business; but we have a good many prosperous merchants, most of whom are as liberal as their means will allow.

Do you think we could support a hospital, and, if so, how large a one do we need, and how should be go about it?

T. W. H. (A WESTERN TOWN).

You should certainly have a hospital, and you can support one. So, without going into arguments as to the whys and wherefores, here is about what you need. Plans should be drawn for a 100-bed hospital, U-form, with the points toward the south. Build one wing and the joining line, this last to be administration, a temporary home for nurses, and operating rooms on the top floor, facing north. This will make a right angle, with 50 patients in the wing; the other wing can be built later when the need is developed. You can build this building for about $100,000; the other wing, later on, will cost only about $50,000.

Now, to go about the business. Get your newspapers to press the need of the hospital on the public. Pick out instances here and there to show this—there will be plenty of them. Then get a dozen of your most progressive citizens to sign a call for a mass-meeting, and see that the meeting is written up and talked about. See that those who signed the call also attend. At the meeting have a lot of enthusiasm and good speeches. If your doctors are harmonious, get them to the meeting. Let some of them speak, but have it definitely stated by somebody in authority that the hospital is to be an "open door" institution, so far as the doctors are concerned—"fair for all, favors for none." Appoint a very large committee or twenty committees to raise funds on a subscription list, and a very small committee to see about plans. Do not elect any permanent boards until you get your money raised, and do not let any plans be shown until then; indeed, if there are two or more architects in the town, it will be

better not to choose until the money is all subscribed. Have just as many people as possible at work until the money is raised, and afterward just as few. The permanent board should be large and representative of all religions and other interests. Have a woman's auxiliary board, but never let them buy anything for the hospital; confine them to schemes for raising money.

In planning the hospital, have some private rooms, and some wards of 2, 3, 4, and 6 beds, but make no plans for free patients. Take care of your charity work out of special funds raised for the purpose. In this way you can have a self-supporting hospital—yes, you can, and your charity work must be financed otherwise.

Before the plans are completed, employ your superintendent, who should be thoroughly experienced in hospital administration, and let him or her criticise the plans—not necessarily to undo all that has been done, as some badly informed persons would want to do because they had not made them originally, but for their criticism and advice. Then build your hospital, and run it so well that whoever got sick in the community would want to get to it just as quickly as possible. Treat all the doctors alike, and give them what they need to do their best work.

If you do these things, your hospital will be a success—the one best asset of your community.

Operating Room Costs.

To the Editor of THE MODERN HOSPITAL:

We are charging $3 for the operating room for local anesthesias and $5 for general anesthesias. Our surgical nurse insists that the expense to the hospital is practically the same. Is this true, and, if not, what is the difference?

J. M. W., MICHIGAN.

It is not true that the cost is practically the same, but the exact difference is not easily fixed. In a local anesthetic, which is usually for operations on the nose, throat, or the eye, we use very little dressings, almost never anything more than small sponges, and these are not wasted, because they are washed and used again. For the anesthetic itself we use either cocain in a 4-percent solution or the Schleicht formula, which comes in the form of tablets, and almost none of the solution is wasted, and the anesthetic costs only a few cents—perhaps 5 cents would be a liberal allowance for the actual cost. In nose, throat, and eye operations not very many people are occupied, and usually only three people are cleaned up—the doctor, his assistant, and the clean nurse; oftentimes the assistant does not clean up. This means two or three pairs of gloves, but there is very little rough work about operations in the throat and on the nose, and consequently not very many gloves are put out of commission—let us say one pair of gloves to three operations. About half the instruments are used in nose and throat operations as against laparotomies, perhaps not even so large a proportion. This means that the work of cleaning and sterilizing the instruments is about half that required for the general anesthetic. There is almost as much work to prepare for and clean up after the local as for a general anesthetic, and I imagine that your surgical nurse was thinking in terms of labor and trouble rather than in dollars and cents when she was figuring on costs.

Now let us see what the general anesthetic costs. Usually a laparotomy drum is pretty well exhausted in a laparotomy, and this means the washing, drying, counting, and sterilizing of the contents, which is quite a job. I imagine that it would take two hours of actual working time of one pupil nurse to prepare the contents of a drum for use. The expenditure for actual dressing material is not great even in a laparotomy, because things are cleaned and used again, but more people will clean up for a laparotomy; perhaps an average of five people will wear gloves, and an operation will usually cost about one pair of gloves by actual destruction. In the matter of laundry, there is not very much to choose between the two operations. If gowns are changed after each operation, local and general, and, counting sheets and towels, face and head cloths, there would be an average of pretty nearly twenty pieces in either case. The average general anesthetic will require a half-pound of ether, and even where less is used the residue generally goes to the solution bottle for the preparatory room. A half-pound of ether costs 25 cents. In the general anesthetic there is usually a certain amount of catgut used—say, two tubes at an average cost of about 10 cents a tube.

Figuring along these lines, we have an actual expenditure for material, in the case of a general anesthetic, of half the price of one pair of gloves—because the gloves can be used for dressings afterward—say, 25 cents; ether, 25 cents; catgut, 20 cents; dressing material—including solutions, gauze, cotton, tissue, silk, thread, and the like—say, 20 cents, or a total of 90 cents for the general anesthetic, which we do not have in the case of the local; and against these charges in the case of the local we have, say, 5 cents for the anesthetic and 15 cents for gloves, or a total of 20 cents, making the difference in cost about 70 cents. The work of the nurses is a great deal more for the general anesthetic. The general operating room is usually large, and a good deal more furniture has to be cleaned. Perhaps it takes twice as much work to prepare a room for the general anesthetic as for the local. It generally takes three nurses twenty minutes to prepare for a general anesthetic, including the preparation of the patient, and it takes quite as long to clean up afterward; meaning that in actual performance of labor it would take one nurse two hours to clean up, and, if it has taken one nurse two hours to prepare the laparotomy drum, it means that each general laparotomy costs four hours of labor of one person. In the nose and throat room this same work would be reduced to perhaps one hour for one person, or a total difference of three hours of labor for one person and 70 cents in money. Very many of these assumptions may be disputed by the surgical nurse who is closer to her field of operations, and discussion on this subject would be welcome in the columns of THE MODERN HOSPITAL.

The Empire Hospital, London, is an institution recently opened for persons of moderate means unable to afford an expensive nursing home. It is the first and only institution of the kind in England, and is constructed on the most modern hygienic principles. Each patient has a room, and the two operating theaters for minor and major surgery are separate. Another room is set apart for operative treatment of septic cases. The electric installation comprises an x-ray room, a Nauheim bath, dowsing, radiant heat, electric light, and hydroelectric baths. Any physician, surgeon, or practitioner of medicine may send his patients to this hospital, and patients are attended in all cases by their own doctors.

Miss Helen Scott Hay, superintendent of the West Suburban Hospital, Oak Park, Ill., and a Red Cross nurse, has been paid a very high compliment by Queen Eleanor, of Bulgaria, who, it was announced some time ago, would visit the United States this summer for the purpose of inspecting the leading hospitals of the country. The queen is desirous of establishing in Sofia a modern training school for nurses, and has selected Miss Hay to organize the institution and act as its superintendent for the first four years. Queen Eleanor is herself a graduate nurse from a Russian school, and served under the Red Cross in the Russo-Japanese war. At present no complete courses for nurses are offered in Bulgaria.

GREEN AND BLACK OPERATING COLORS.

St. Luke's Hospital, San Francisco, Tries Out New Color Scheme, Which Is Enjoyed by Operators.

The problem of the color scheme of the operating room has not yet been solved. Hospital boards want the "all white" effect to make "show places" of operating suites. A number of hospitals have led departures from the established white enamel—Dr. Corwin, of the Colorado Fuel and Iron Company, at Pueblo, who treated his operating rooms in lead grays, and Dr. Carrell, of the Rockefeller Institute, who adopted black, including black garments and black face and head cloths.

A unique departure has been made in St. Luke's Hospital, San Francisco, where Dr. H. M. Sherman, of the Polyclinic of that city, has inaugurated "spinach green" colors. Dr. Sherman has written the story of his new operating rooms for the *California State Journal of Medicine*, to which we are indebted for the facts and for the accompanying illustration:

Operating room in St. Luke's Hospital, San Francisco, as arranged by Dr. H. H. Sherman.

"The discomfort I have had in the present-day white operating rooms led me to suggest that we have dark floors and wainscots in these rooms," says Dr. Sherman, "so that the operator who looks up from a wound shall not encounter a glare of light and find his eyes useless for a moment as he looks back into the less well illuminated wound. The color scheme, it seemed to me, should start from the red of the blood and of the tissues, and therefore I advised that green, the complementary color to red, should be chosen for the color of the floor and wainscot. The particular shade of green to be selected was that which was complementary to hemoglobin, and it was found to be the green of the spinach leaf. Incidentally it may be stated that the iron in the chlorophyl of spinach is said to be in the same chemical combination as is the iron in hemoglobin, but I know nothing of the value of this in making spinach green complementary to hemoglobin red.

"A room painted in this way, the floor and the walls for six feet from the floor a bright spinach green and all above a glazed white, was matched for use against a room painted a glazed white—floor, walls, and ceilings—in the little operating pavilion built at St. Luke's Hospital just after the fire. No one who could get into the green room to do an operation ever went into the white room, and after some months of this experience the point was accepted as settled sufficiently to warrant the innovation of a room similarly colored in the operating suite in the new hospital. Here, however, we could not get in tiles as close an approximation to spinach green as we could in paint; the tile for the floor had to be duller and darker and that for the wall darker, but the two shades harmonize, and answer the purpose perfectly of preventing the bright daylight from being reflected upward from walls and floors into the eyes.

"Above the level of the six-foot green wainscot is white encaustic tiling to the ceiling, and the ceiling itself is a bright buff. This arrangement imitates fairly well the optical environment out in the fields or among low bushes, where the ground of the surroundings, to above the level of the eyes, is green, and the sky overhead is full of white daylight. This again is the optical condition for which the eye was originally adapted by natural selection, and it seems only right to reproduce the condition for the eye when it is to be relied on for quick and accurate work; while the conditions of greatest eye-strain—the dead white and glare of snow on ground and bushes—is the optical condition reproduced by the white rooms and the white furnishings.

"At first ground glass in the windows was tried, but this was changed to clear glass as giving more light from a desirable direction. In course of the experimental work it was found that the light reflected into the operator's eyes by the white sheets and towelings was as dazzling and as interfering as was that reflected from the floor, and so the same color scheme was followed out, and green toweling and green sheets of galatea were provided. The color in these, however, did not stand the superheated steam in the sterilization. They became a dingy gray. I then decided to surround the whole operation field with black, as giving a surface from which no light whatever could be reflected, using it around all wounds, as I had used it around the mouth in cleft-palate operations and around the vagina in operations there. I not only had sheets and towelings of black, but I had black gowns

made, and the coverings for the instrument tables were all of black, and I found that they were exceedingly satisfactory. The only objection I have heard urged against them was the superstitious fear that people coming up for operation would see this somber accouterment and consider it a color of bad omen. This has proved to be a groundless fear, for patients who have had work done upon them under local anesthesia have expressed no objection to the black dress of the operator, nurses, and room."

Dr. Sherman says that operators like the new green and black effect, with the light coming from the light buff colors of the upper walls and the ceiling, for he says:

"The eye was not compelled all the while to receive light rays from every direction when the only rays it wished to receive or needed were those that came from the wound itself. Under ordinary conditions the eye might be considered as trying to keep out, by pupil contraction, all the extraneous light, and at the same time trying to let in, by pupil dilation, all it really wished to get from the wound; all of which was a definite overstrain of the accommodative and visual capacities of the eye, which would conduce certainly to nerve fatigue and consequently to general fatigue. Indeed, it has not been uncommon in this and other hospitals to hear nurses who had to spend a good part of the day at their duties in the operating room complain of the effects of the brilliant white environment. I think we should have long ago learned this lesson in optics from our coworkers in the laboratories, for no one ever saw in a laboratory where the microscope was to be used, white tables, benches, and shelving. On the contrary, these are stained a dead black.

LETTERS TO THE EDITOR

Insufficient Humidity.

To the Editor of THE MODERN HOSPITAL:

In the June number of THE MODERN HOSPITAL is a laudatory notice of an air moistener that hangs behind the usual radiator. For the increase of bodily comfort and health in winter, when all indoor air is robbed of its moisture by heating, and is often drier than that of arid deserts, nothing can be more desirable than an appliance that will restore to the atmosphere the moisture it should normally have—50 to 60 percent of the saturation point—but all such appliances as you refer to are so utterly inadequate as to be not worth their cost and trouble. Their installation is merely a recognition of the need and an expression of a willingness to meet the need. The actual amount of water evaporated by them is trifling as compared with the amount needed. However difficult it may be to meet the situation in residences, there is no excuse for the modern hospital not being specially provided with a central equipment to meet this very urgent need.

JAMES W. WALKER, M. D.,
1504 East Fifty-third street, Chicago.

Through the influence of "The Altruists," a charitable organization composed of some twenty-five women of Memphis, Tenn., the bachelors of that city are supporting a baby hospital and fresh air camp during the heated season. This is the second summer of the institution, and much interest in its activities is developing. The bachelors who subscribe to the fund are organized, and it is said that any member of the club who fails to come to time with his contribution is promptly "arrested." The camp accommodates 100 babies at a time.

St. Louis has won a big victory for clean milk. The bill drafted by the board of health was passed almost unanimously by the municipal assembly. It provides for the rigid standard for milk that the department of agriculture recommends. In future all milk dealers must register with the board of health, with whom is vested the power of giving or revoking permits. One year after date of the bill's passage all milk dispensed in St. Louis is to be either pasteurized by the Held method, or come from cows that are inspected by the board of health.

HINTS FOR HOSPITAL SUPERINTENDENTS.

Save your burnt-out electric light bulbs if you have many of them. Put them in a barrel in the basement or storeroom; there is a ready market for them at 5 cents each in quantities.

When you buy paint or varnish, do not let the appeal of price guide you, for in few things is the truism that you don't get any more than you pay for exemplified as it is in paintstuffs. The product of a reputable manufacturer and of a known brand is the best safeguard.

A mixture of rottenstone and crude oil is an excellent means of cleaning and rejuvenating stained woodwork, floors, table tops, and the like. If the object is a level surface, sprinkle with the rottenstone, sluice with oil, and with a piece of waste or flannel rub first with a rotary motion, then with the grain until a clean-looking dull gloss finish appears.

A strict measure of justice goes a long way in dealing with those under your roof. Keep your promises to the letter, and make good on your threats when you have to use them. Don't call a scrub woman to account for an infraction of a rule and then allow a surgeon or board member to break it with impunity. You are superintendent of your hospital.

In no line, medicine and surgery included, has there been developed more specialism than in mechanics, and the day of the handy man or all-around mechanic, who was equally efficient in mending the roof or repairing the furnace is past. Do not let the local locksmith tinker with the elevator motor or the "umbrellas to mend" man patch a leak in the sterilizer. Even if you have to wait to get the right man for the job, it is wiser, and the ultimate maintenance cost will be much less in the end.

During the hot "dog days" of the summer, when the mingled odor of ether and kitchen insist on pervading the hospital, considerable relief can be obtained by placing an electric fan, 16-inch or larger, about three or four feet from the floor at the head of the ward or corridor and facing the general trend of ventilation. About twelve inches in front of the fan and on a level with its pedestal place a bottle of lavender or smelling salts, and a faint, clean odor will soon be noticeable over a considerable part of the building, and the air will seem markedly vitalized.

The economy of effort presents an interesting and profitable study in the hospital, and an analysis of a given service will show in many instances a surprising amount of lost motion in its performance, and the profitless expense of energy on the part of the active staff of a hospital in the course of a year would furnish enough power to run the elevators. How far do you have to reach for the object that you use most often? Where are you most apt to be when called on the telephone, and wouldn't it be advisable to have an extension to that vicinity? In leaving a room at night, do you have to retrace your steps to the far side to extinguish the light or is the switch near the door? These and a multitude of other energy leaks may have considerable to do with the tired look on many hospital faces.